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ELECTRIC POWER IN NORTH ITALY

Basic information on the production, transmission and consumption of electric power in North Italy.

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I. Importance and General Characteristics.

A. General. North Italy produces and consumes far more electric power than any other part of the country. About 75 percent of Italian electric power production and almost the same share of the country's total industrial capacity are in North Italy. The seven northernmost compartimenti produced 12,500,000,000 of the 17,500,000,000 kilowatt hours of electric energy generated in Italy in 1939. In addition to supplying its own power needs, North Italy is able to export current to less favored areas farther south, particularly Toscana (Tuscany).

Hydroelectric plants produce approximately 94 percent of all the electric power, and thermoelectric plants 6 percent. The main sources of hydroelectric power are on the southern slopes of the Italian Alps, at the foot of which, in the Po Valley, lie the most populous and highly industrialized areas of Italy.

Despite the abundance of water power, however, it has been difficult to harness the streams in such a manner as to provide a constant supply. The present great development, which has made Italy practically self-sufficient in electric energy, has been achieved only through the construction of seasonal reservoirs on a scale unknown elsewhere in the world. Electric

generating capacity is consequently divided among a large number of relatively small plants.

B. Physiographic and Hydrographic Factors. The Alps are the chief physiographic feature favoring hydroelectric power production in North Italy. Forming the northern and western borders of Italy, their mean height is 4250 feet, but many peaks rise above 9800 feet, and some of 13,000 feet are among the highest in Europe. The snow line is between 8200 and 10,500 feet ~~and 10,500 feet~~ and is generally lower than the higher mountains of the main ranges. This fact accounts for the existence of about 800 glaciers covering a total surface of approximately 350 square miles. There are also a great many lakes, some of them at high altitudes.

The hydrographic system comprises numerous streams, most of which are tributaries of the Po River. The streams in the Venetian region, however, flow directly into the Adriatic Sea, and those on the Ligurian slopes enter the Ligurian Sea. The principal streams are between 90 and 254 miles in length, the longest being the Adige (254 miles) and the Adda (194 miles).

The physiography and hydrography of the Alpine region are favorable for the development of hydroelectric plants, principally because of the following

factors:

1. The great number of glaciers and perennial snow fields which contribute appreciably to the flow regulation;

2. The small quantity of silt carried by the rivers;

3. The generally favorable nature of the ground for the construction of important works and the boring of pressure tunnels.

The subdivision of the hydrographic system into numerous basins, which requires the installation of a great number of plants of relatively small capacity, is one of the less favorable aspects. A second disadvantage is the great seasonal variation in the flow of the rivers, which has necessitated the construction of numerous reservoirs, a factor discussed in paragraph II, A,2 below.

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II. Production, Consumption, and Transmission

A. Production

1. Storage Reservoirs. An important characteristic of the hydroelectric power system in North Italy is the large number of storage reservoirs. Since Alpine streams derive most of their water from melting snow and ice, the absolute peak of waterflow occurs in summer, the absolute minimum in winter, and a secondary peak in the autumn. The percent of flow by seasons is as follows:

TABLE 1. FLOW OF ALPINE RIVERS BY SEASONS

Season	Percent of water flow
Winter (Dec.-Feb.)	9
Spring (March-May)	24
Summer (June-Aug.)	41
Fall (Sept.-Nov.)	26
Total	100

This seasonal deficiency in winter and early spring is offset partly by importing current from plants in the Apennines, where the source of water is mainly rain and the maximum output is available in spring and autumn; and partly by utilizing steam plants in the area, which generate the bulk of their current from December to March. Because of the great extent of power-producing resources in the north, however, these measures only partially reduce seasonal variations. For this reason, and also because of the serious drought in 1921-22, construction of storage reservoirs in the Alps was undertaken.

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By 1936, the country had 74 storage reservoirs with a total capacity of 1,599,500,000 cubic meters and accumulated energy to the amount of 1,695,200,000 kilowatt hours. Alpine reservoirs in 1936 had 40 percent of total national capacity and about two-thirds of the accumulated energy. Appendix I lists the principal Alpine reservoirs.

Generally speaking, these reservoirs are in remote areas high in the mountains or in thinly-settled non-industrialized areas. The upper Po Valley has a number of reservoirs, some of them natural lakes with the water levels raised by dams, and some artificial reservoirs, the largest of which has a capacity of about 32,000,000 cubic meters. The Toce Valley, the chief industrial centers of which are below Lake Maggiore, has many small reservoirs -- the largest not over 20,000,000 cubic meters capacity -- above that large lake. Other valleys in north-central Italy have several moderately large reservoirs above Lakes Como, Iseo, and Garda, most of them natural lakes dammed to raise the water level. In north eastern Italy, the Piave Valley has one large natural lake (Santa Croce), and a number of small artificial reservoirs. The Adige Valley is characterized by small and moderate-sized reservoirs, mostly dammed natural lakes, but also some artificial reservoirs (especially Careser, with 15,500,000 cubic meters capacity).

2. Power Plants: General Character. The great majority of Italian power plants, including the largest ones, are in North Italy. Even there, however, the average plant is small. In 1937 there were only

three plants with a capacity of more than 100,000 kw., although additional large units have been projected or are under construction. Most of the hydroelectric plants are on relatively small streams in the High Alps, where the volume of water is small and the fall great. The plants form a fringe along the French, Swiss, and Austrian borders. There are several areas where the construction of clusters of plants has been favored by such conditions as streams with high declivities, narrow valleys, or natural reservoirs. An outstanding example is the upper valley of the Toce River, where, as early as 1929, there were ten stations of over 10,000 kw. installed capacity, totalling 177,100 kw.; and more plants have been added since then. Other groupings of this type are the Lake Santa Croce-Piave River stations, the Val Camonica group along the Oglio River above Lake Iseo, the Liro River plants north of Lake Como, and several groups in the extreme west of Italy on the affluents of the upper tributaries of the Po, such as the Dora Baltea, the Dora Riparia, and the Maira.

Thus a notable characteristic of the North Italian plants is that they succeed one another "in cascade" in some places very closely, along the water courses from which they draw their power. Often, one

water course is regulated from a large reservoir system at its headwaters, and each plant draws its water mainly from the discharge of the plant immediately above. This constructional economy is partly counterbalanced, however, by a certain loss in flexibility.

As a result of her poverty in other sources of power, Italy was one of the earliest countries to make large-scale use of her water power resources. Hence many of her plants are old. The majority date from before 1914 and an additional large number from the period 1914-1918. Plants of this nature, however, have a long life and are probably still efficient. Most of the excellent equipment is of Italian manufacture.

The program for hydroelectrification went forward rapidly in the period 1919-1939 also, and on the eve of the war this program called for a still further increase of some 50 percent in the output of current by 1945 or 1946, to bring the total to 30,000,000,000 kwh. This program has been postponed because of a shortage of materials.

The following three tables indicate the distribution of both hydroelectric and thermoelectric plants according to size, in the northern compartimenti.

TABLE 2.

NORTH ITALY: ELECTRIC POWER PLANTS AND INSTALLED CAPACITY AS OF DECEMBER 31, 1937.

Compartimento	No. of plants Hydro.	No. of plants Thermo.	Installed capacity (kw.) Hydro.	Installed capacity (kw.) Thermo.	Total No. of plants	Total Installed capacity
Piemonte	270	30	1,089,304	61,694	300	1,150,998
Lombardia	191	37	1,111,897	135,406	228	1,247,303
Venezia	222	41	925,420	101,460	263	1,026,880
Liguria	18	12	47,058	104,850	30	151,908
Emilia	46	16	221,682	46,160	62	267,842
Total	747	136	3,395,361	449,570	883	3,844,931

TABLE 3.

NORTH ITALY: HYDROELECTRIC PLANTS CLASSIFIED ACCORDING TO SIZE AS OF DECEMBER 31, 1937

Compartimento	Number of plants in each size range: Over 15,000 kw.	5,001-15,000 kw.	1,001-5,000 kw.	501-1,000 kw.	301-500 kw.	300 kw. and under	Total no. of plants
Piemonte	25	22	56	54	35	78	270
Lombardia	18	29	42	36	18	48	191
Venezia	15	11	33	46	28	89	222
Liguria	--	4	4	6	--	4	18
Emilia	3	8	11	3	6	15	46
Total	61	74	146	145	87	234	747

TABLE 4

NORTH ITALY: THERMOELECTRIC PLANTS CLASSIFIED ACCORDING TO SIZE AS OF DECEMBER 31, 1937

Compartimento	Number of plants in each size range: Over 15,000 kw.	5,001-15,000 kw.	1,001-5,000 kw.	501-1,000 kw.	301-500 kw.	300 kw. and under	Total no. of plants
Piemonte	1	2	9	5	5	8	30
Lombardia	4	1	9	10	3	10	37
Venezia	1	1	9	7	8	15	41
Liguria	3	1	3	2	2	1	12
Emilia	1	-	7	1	3	4	16
Total	10	5	37	25	21	38	136

The principal hydroelectric developments can be traced most easily by following (in clockwise direction, starting in southwestern Piemonte) the main Alpine water courses along which they are located:

(a) The Po headwaters: hydroelectric developments of medium size on the Maira and Varaita Rivers. That on the Maira (Saretta-Acceglio, etc.) is used largely for railway supplies; the Varaita development, except for Casteldelfino, is mostly in the project stage.

(b) Dora Riparia and Stura River Basins: medium sized developments (Venaus, etc.). The Dora Riparia group supplies Torino, the Stura group Milano.

(c) The Dora Baltea Basin north and west of Torino, containing several plants in the 25-60,000-kw.-class, including Maen, Covalou, Isollaz, Ponte S. Martino. This system is the principal source of supply to Torino, but it also provides current for Milano.

(d) The Toce River Basin northwest of Lake Maggiore, containing the main concentration of plants of the important Edison group - a major source of Milano's supply.

(e) The Liro-Mera and Adda Basins, north and east of Lake Como, with a large number of medium-sized plants, as well as the important plants of San Francesco (Mese) and Venina. Considerable further development is projected or under way in the Liro-Mera Basin.

(f) The Oglio River Basin, northwest of Lake Garda, with a fairly concentrated group of plants in the 25-50,000 kw. size range, including Cedegolo, Temu, Sonico, etc.

(g) The Adige Basin, north and northeast of Lake Garda, containing the most important of the Italian plants. Cardano and the new Bressanone plant are both over 100,000 kw. in size. In addition, there are a number of plants in the 25-60,000-kw. size range (Ponte Gardena, Marlengo, Cogolo, etc.). Current produced goes to Milano and to Emilia, and to a lesser extent to northeastern Italy.

(h) The Piave River Basin, including the plants on the Meschio River. The most important plants, at Fadalto and Nove, are in the 60-80,000-kw. size range. The area supplies northeastern Italy.

(i) The Isonzo Basin, which is only very partially developed.

(j) The Reno and Secchia Basins, on the northern slopes of the Apennines, west and southwest of Bologna: contain a group of plants (including Suviana and Pavana) which are important mainly for railway supply.

Appendix II lists alphabetically, with relevant data, all power plants in the area above 5,000 kw. in size.

3. Extent of Production. Electric current production for the entire country rose from 15,000,000,000 kilowatt hours in 1937 to 20,400,000,000 kilowatt hours in 1941. Of this total output, the following quantities were produced by the seven northern compartimenti:

TABLE 5. NORTH ITALY: ELECTRIC POWER PRODUCTION (Kwh.)

Compartimento	1937	1938	1939
Piemonte	3,492,800,000	3,582,000,000	3,884,900,000
Liguria	192,400,000	296,900,000	325,400,000
Lombardia	3,430,900,000	3,521,100,000	4,133,000,000
Venezia Tridentina	1,633,400,000	1,566,600,000	2,022,600,000
Veneto	1,485,200,000	1,399,200,000	1,675,100,000
Venezia Giulia	67,000,000	62,300,000	90,300,000
Emilia	411,600,000	264,200,000	391,800,000
Total	10,713,300,000	10,692,300,000	12,523,100,000
Total for Italy	14,960,200,000	15,108,100,000	17,470,600,000

Appendix 3 shows the production of electricity in each of the North Italian compartimenti by months for 1937, a normal hydrologic year. The total production of 10,887,522,900 kwh. is about 174,000,000 kwh. higher than the 1937 output shown in Table 5. Both are taken from official sources.

The power industry of North Italy is very sensitive to weather conditions in the Alps. The winters of 1941-42 and 1942-43 brought abnormally light rainfall and snowfall, with the result that available water power was much less than it would otherwise have been. This handicap to power production was only partly offset by the opening of several new hydroelectric plants. The resulting

tightness in the power supply necessitated a greater degree of rationing. Nevertheless, after adjustments in distribution had been made, North Italy was still able to supply its own needs and export 1,500,000 kilowatt hours daily to industrial centers in Central Italy.

B. Consumption. Allocations of electric power for consumption in Italy in 1942 were roughly as follows: 9 percent for heating and lighting, 11 percent for railways, 44 percent for motive power in industry, and 36 percent for the chemical and electrometallurgical industries. Current was rationed carefully to both domestic consumers and industries. Domestic consumption was cut in April 1943, by 30 percent of the rate of consumption in the spring of 1941, and all industries but those manufacturing armaments were cut by 25 percent.

The following table shows the pre-war consumption of electric energy by the chief groups of consumers, and the estimated consumption in 1942. The figures refer to the whole of Italy. The seven northern compartimenti account for 75 percent of the total amount of power consumed, but the proportions used there by the various classes of consumers would differ somewhat, though not radically.

TABLE 6. ITALY: ELECTRIC POWER CONSUMPTION, 1939 and 1942.

Class of consumer	1939 Millions of kwh.	1939 Percent of Total	Estimate 1942 Millions of kwh.	Estimate 1942 Percent of Total
Domestic lighting	748.6	4.7	450	2.5
Public lighting	311.5	2.0	20	.1
Domestic appliances	438.8	2.8	200	1.1
Miscellaneous public services	363.1	2.3	250	1.4
Agriculture	145.3	.9	150	.8
Traction	1,777.3	11.2	2,700	14.8
Industrial heating	596.9	3.8	450	2.5
Electro-metallurgical industry	2,655.6	16.8	3,950	21.7
Electro-chemical industry	2,481.3	15.7	3,200	17.6
Food	788.1	5.0	750	4.1
Textile industry:				
Cotton	582.6	3.7	370	2.0
Flax, hemp, jute	100.1	.6	50	.3
Wool	209.8	1.3	100	.5
Silk	51.6	.3	50	.3
Rayon	296.5	1.9	400	2.2
Miscellaneous	86.7	.6	50	.3
Machinery industry	982.3	6.2	1,300	7.1
Metal industry	711.4	4.5	1,000	5.4
Chemical industry	692.1	4.4	800	4.4
Paper industry	535.5	3.4	400	2.2
Building materials	555.0	3.5	400	2.2
Mining and quarrying industries	254.0	1.6	800	4.4
Timber industry	102.1	.7	80	.4
Ceramics and glass industries	100.0	.6	100	.5
Clothing industry	56.7	.4	50	.3
Printing industry	32.8	.2	20	.1
Miscellaneous industries	147.4	.9	150	.8
Total	15,806.3	100.0	18,240	100.0

C. Imports and Exports of Current. Except for seasonal variations, North Italy is normally more than self-sufficient in electric power, so that it can afford a considerable annual export to Toscana, the only Central Italian province which is not self-sufficient. The exported power originates partly in Emilia, adjacent to Toscana (Tuscany), but most of it originates farther north. In 1933, the last year for which data are available, this export amounted to 229,000,000 kwh. A small amount of power is also regularly exported from Fiume to Yugoslavia.

Import of current into the northern compartimenti is chiefly from Switzerland (320,000,000 kwh. in 1941). This current goes mainly to Lombardia, with small amounts to Piemonte and Liguria. Occasionally current is also imported from Central Italy during the winter deficiency in the north.

Among the individual compartimenti, Piemonte and the Venetian compartimenti (except Venezia Giulia) are entirely self-sufficient; Lombardia is partly dependent (about 20 percent) upon surplus current from the two major producing provinces (Piemonte and Venezia Tridentina) and from Switzerland; and Emilia obtains about half of its consumption through imports, mostly from or through Lombardia.

D. Local Supplies. Voltages for lighting and local power are rather low. Three-phase AC in two

ranges predominates: 127/220 and 150/260 volts. These ranges are the most common, but also included in the lower range are many "declared" voltages between 110 and 130 for lighting, and 190 and 230 for power; similarly, in the higher ranges voltages may be 140 to 160, and 240 to 280. In addition, there are a few special voltages and some DC. See Appendix IV for details of electric current characteristics of North Italian communes.

E. The Transmission System. The problem of transmitting electricity in North Italy is of special importance because most of the power is generated at a distance from consumption centers. This accounts for the complex high-tension transmission system and for the complicated system of substations.

1. General. Most of the high-tension lines in North Italy run southward from Alpine generating plants to consumers in the plains and valleys. A few of those lines continue down the peninsula, cross the Apennines, and connect with Central and South Italy. Only one important line crosses North Italy from east to west: the line from the Cardano hydroelectric plant in the Adige Valley to Cislago near Milano, with an extension eastward to the Piave Valley lines, and another westward

to connect with the Piemonte network at Turbigo.

2. Switching and Transformer Stations. Only two main switching and transformer stations are equipped to handle the exchange of energy between North and Central Italy: (1) San Polo d'Enza, 11.25 miles southwest of Reggio Emilia, equipped with 42/50-cycle frequency converters, is the principal mixing and regulating station between North and Central Italy. To the north, it connects with the Oglio plants (via Gorlago), with Brugherio (via Reggio Emilia), and with the Adige Valley plants (via Foresta). (2) Bologna-Santa Viola station connects with the networks of Edison-Cisalpina and Adriatica to the north, and the Firenze-Rifredi and Riccione lines to the south. Minor interconnections exist between Reggio Emilia, Farneta, and the Livorno-Tavernuzze line farther south. Reggio Emilia is also connected with La Spezia. The Prato and Rifredi plants, owned by the state railways but operated at industrial frequency, are joined to Bologna by a 60-kv. line.

3. Voltages. The usual voltages of high-tension lines are 60, 80, 125, 135, 150, and 220 kv.; those of intermediate high-tension lines are 20 and 30 kv. Lines for railway supply are almost all at 60 kv. Appendix V lists information on lines above 120 kv. for which data are available.

4. Frequencies. Frequency, an essential characteristic of alternating current, is not standardized in the Italian power system. North Italy uses two frequencies: 42 cycles in Venezia, Emilia, and Lombardia, and 50 cycles in the Trentino and Piemonte, with "islands" of different frequency in each zone. Energy of two different frequencies can neither be mixed nor sent over the same transmission line simultaneously. The principal factors to be considered in connection with frequencies are as follows:

(a) Most of the newer power plants (those constructed in the last 15 years) were built to operate at both frequencies, merely by changing the speed of turbines and generators; and separate transmission lines often connect these plants with 42- and 50-cycle regions. Where this is not the case, a number of transmission lines can carry energy of either frequency, although not at the same time. Since May 1939, new plants have been obliged by government decree to provide for supply at the frequency of the region in which the plant is located, as well as at that of the adjacent region.

(b) Conversion stations have been built near the boundaries of regions of differing frequency.

(c) Some generating plants located in an area of one frequency serve their main consumption centers in another frequency area. Thus, Cardano supplies power to the 50-cycle Piemonte region over a 150-mile line which crosses the 42-cycle Lombardia region.

(d) In general, the amount of power exchanged between regions of differing frequency is fairly small. The balance of production and consumption in most frequency regions is quite good.

(e) The frequency problem in peacetime is no more than a minor inconvenience. In wartime, however, any extended damage affecting a considerable percentage of generating plants would be much more serious than in a single-frequency area. Under such conditions, conversion stations assume paramount importance.

III. Ownership of Electric Power Facilities.

A. General. About two-thirds of the electric power generation and distribution in Italy is controlled by a small number of large companies or "groups". The remainder is in the hands of municipalities, industrial companies, the state railways, and a few small independent companies.

Assets, reserves, and net profits of power companies amounted in 1941 to one-fourth of the total of all Italian stock companies. Total assets of all electricity companies amounted to 15,000,000,000 lire, reserves to 4,000,000,000 lire (reserves of all stock companies 15,000,000,000 lire), net profits to 927,000,000 lire (profits of all stock companies 4,000,000,000 lire). Net profits for the year amounted to 6.2 percent of assets and 8.3 percent of capital. Only 75 electric power companies closed the year with losses, amounting to the small total of 10,000,000 lire.

1. Financing and Subsidies. Some of the Italian electric power companies have been financed partly through American dollar bonds. The Italian Superpower Corporation, an American company, for instance, holds securities of many of the more important concerns. French, Belgian, and British capital has also been invested in power enterprises.

Much of the present hydroelectric development of North Italy was financed by state subsidies. Between 1922

and 1932, the state spent 346,145,602 lire in subsidizing hydroelectric installations. Various subsidies were provided for by the royal decree of October 2, 1919, applying to new plant construction and transmission systems, covering up to 25 percent of the cost. Other legislation of May 15, 1919, July 29, 1925 (number 1315), September 17, 1925, April 15, 1928 (number 854), and March 21, 1929 (number 591), provided for or extended aid to specific types of developments. No subsidies are now being paid under these laws.

Subsidies now are given only for projects involving reservoirs and artificial lakes. Such projects are exempted from the state tax on production, but must pay local taxes. Subsidies may be granted to pay up to 30 percent of the costs of construction and up to 10 percent of the costs of designing and planning. If a project provides for other functions in addition to electricity generation (e.g. for irrigation, water supply), the subsidy may cover up to 60 percent of costs. For these projects, the state is paid 25 percent of any annual profits over 7 percent and 50 percent of any profits over 10 percent, until the subsidy is repaid.

A government-financed bank, the Istituto di credito per le imprese di pubolica utilita (Credit Institute for Public Utilities Undertakings) extends credit on favorable terms to public utilities, including electric plants. By the end of 1936 its loans for electricity production and distribution totaled 1,268,000,000 lire. This Istituto is probably connected, perhaps as a subsidiary, with the

Istituto per la Ricostruzione Industriale, a state agency generally comparable to the American Reconstruction Finance Corporation.

Another state-controlled credit agency which has helped to finance electric developments is the Casse depositi e prestiti (Savings and Loans Bank).

2. Companies and their Functions. North Italy is served mainly by Societa Edison (Edison), Societa Idroelettrica Piemonte (SIP), and Societa Adriatica di Elettricita (Adriatica). All of these companies are both operating and holding companies, exercising control over their subsidiaries and affiliates through direct or indirect ownership of capital stock. Further details about these companies are given in Table 7.

Table 7. NORTH ITALY: LARGE POWER COMPANIES (1938)

Name (Abbreviation)	No. of Affiliates	Distribution 1938 (Mill. kwh.)
Soc. Edison (Edison)	41	4,250
Soc. Idroelettrica Piemonte (SIP)	9	2,190
Soc. Adriatica di Elettricita (Adriatica)	20	1,340

Each of these companies distributes electricity within a specified geographic area, and owns power plants, substations, transmission lines, and power equipment, not necessarily within the area served.

Parent companies leave nearly all operating activities up to the member companies of their respective groups. They do control general matters of economic policy; they maintain control over the finances of member companies, extending assistance where necessary either for plant expansion or for operations; they coordinate supply purchases and oversee supply contracts entered into by the members; they provide skilled technical assistance in important problems; they provide for exchanges of power among members; and they have the exclusive right of negotiating labor contracts with the workers' syndicates. Representation of member companies in the employers' federation (Federation Nazionale Fasciste Esercenti Imprese Elettriche) is through the parent companies, so that no conflicts within a group are carried to the federation for decision.

B. Societa Edison. The most important and powerful utilities company in Italy, as well as one of the most important of all private enterprises in the country, is the Societa Edison, formed in January 1884, capitalized in 1941 at 2,500,000,000 lire, with business offices in Milano (Foro Bonaparte 31). In 1941 it generated one-fourth of all Italian electric power.

The Edison Company and its 41 affiliates own hydroelectric plants on the following rivers: Toce and

affluents (most important), Oglio, Liro-Mera, Brembo, Adda, Roia, Maira, Noce, Allione, Tresa, Orba, Stura, Penna, Sturla, Enza, Diveria, Cairasca, and Serio. Some of the larger hydroelectric plants of the system are: Arco-Prati, Cogolo, San Bernardo, Esterle, Dossi, Morasco-Pate, Cadarese-Rivasco, Conti (Verampio), Crevola, Varzo, Pirelli (Rovesca), Colombo, Predare, Farneta, San Dalmazzo, Agaro-Goglio, Val Varaita I, II, and III, Cedegolo (Cisalpina), Esine, Mezzocorona, San Francesco (Mese), Sonico, Temu. It also owns standby and reserve steam plants in high-consumption areas, among which are: Concenter, Genova-Sampierdarena, Piacenza, Porta Volta (Milano), Savona, and La Spezia.

Main subsidiaries of the Edison Company are shown in Table 8.

TABLE 8. SOCIETA EDISON: MAIN SUBSIDIARIES

Name	Business office	Date of incorporation	Capitalization (Million Lire) (Year)
Soc. generale elettrica Cisalpina (Cisalpina)	Milano, Via Caradosso 16	Apr.1907	855 (1941)
Compagnia Imprese elettriche Liguri (Cieli)	Genova, Via Brignole de Ferrari 4	Mar.1905	700 (1941)
Soc. Orobia*	Lecco, Via Manlio Sonvico 3-A	July 1906	400 (1942)
Ovesticino(Societa anonima per distribuzione di energia elettrica)	Novara, Corso Regina Margherita 31	Apr.1891	200 (1942)
Societa elettrica Bresciana	Milano	May 1905	150 (1936)
Officine elettriche Genovesi	Genova, Salita S. Caterina 2	Apr.1895	120 (1941)
"Dinamo" (Societa Italiana per imprese elettriche)	Varzo (Novara)	Apr. 1907	100 (1936)
Societa Emiliana di exercizi elettrici	Parma, Piazzale Bottego 1	Feb.1906	91 (1942)

*In 1942, this company absorbed two former Edison subsidiaries, Soc. elettr. Bergamasca and Forze idraul. di Trezzo sull'Adda.

Edison's territory includes Lombardia, Liguria, part of Emilia, and some zones of northern Toscana and Venezia Tridentina. Lines at 130 kv. connect the important Ticino Basin plants to the industrial region around Milano and Novara, and continue southward to help supply Genova. Other 130- and 140-kv. lines transmit energy from the Stura Valley stations and

the Liro-Mera plants. These latter lines continue (1) south to Genova via Cislago, and (2) via Brugherio substation to Emilia. Lines from the complex group of plants in the basins between Lakes Como and Garda feed generally southward into the Milano network. The 130-kv. line Foresta-San Michele-San Polo d'Enza is owned by Cisalpina. San Michele substation, collecting energy from the Noce plants, is joined to the Montecatini industrial network serving Merano and Bolzano. Bologna is supplied in part by a Cisalpina-owned 130-kv. line running from San Michele and carrying energy generated in the plants of the upper Adige Basin. Many of these lines carry two circuits, and are therefore able to carry large amounts of energy.

Important substations include (1) San Polo d'Enza, with 42/50-cycle frequency converters, connecting the Liro-Mera and Noce plants in the north with Predare and Ligonchio farther south; (2) Arquata Scrivia, one of the most important distributing centers for Genova; (3) Brugherio, Borgomanero, and Vigentino, important for supply to the Milano area; and (4) Reggio Emilia, a key substation on the line connecting Lombardia with Emilia, and with other connections to Farneta and to San Polo d'Enza via Boretto.

C. Societa Idroelettrica Piemonte. Societa Idroelettrica

Piemonte (SIP), like the Societa Edison, is both an operating and a holding group. With its nine subsidiaries, it supplies Piemonte, and ranks second to Edison in importance as a power generator and distributor. Incorporated in July 1899, with its business office in Torino (Via Bertola 40), its capital in 1942 was 1,147,500,000 lire, its profits 70,000,000 lire.

The group owns hydroelectric plants on the following rivers: Dora Baltea, Dora Riparia, Cenischia, Evançon, Lys, Marmore, Isarco, Tanaro, Adda, and Stura. Some of the larger hydroelectric plants of the system are: Mallero, Carona, Bordogna, Vizzola, Maen, Covalou, Isollaz, Ponte S. Martino, Venaus, Isollaz, Cardano. Turbigo and Castellanza function as reserve and stand-by steam plants.

The four Torino substations--Stura, Pianezza, Mirafiori, and Martinetto--are interconnected. Stura, which is a distribution center for the industrial area of Torino, is connected by a double 130-kv. line with the Dora Baltea plants; by a 60-kv. line with the Edison-Cieli network through Savona; and by a 135-kv. line with Cislago. It also receives energy from SIP plants on the Lys River. The Mirafiori sub-station is supplied from Calcinere, on the upper Po. The Pianezza substation is connected by several high-tension lines with the plants on the Dora Riparia owned by SIP and by the city of Torino itself.

Turbigo is the terminal of a 220-kv. line bringing power from the Cardano hydroelectric plant via Cislago. Cislago in turn is connected by a 135-kv. line with SIP's upper Adda Plants.

A line from Cislago to Castellanza supplies energy to this important industrial center.

Many lines in Piemonte are for voltages lower than the usual 120 kv. A complete 60-kv. network, for instance, joins SIP with the Edison subsidiary Cieli.

D. Societa Adriatica di Elettricita. The Societa Adriatica di Elettricita is similar to, Edison and SIp in structure and function. Incorporated in January 1905, with its business office in Venezia (S. Toma 3901), its capitalization in 1941 amounted to 1,250,000,000 lire and its net profit to 140,000,000 lire. Adriatica and its 20 subsidiaries supply most of the regions of Veneto, Venezia Giulia, Emilia, and Romagna.

The group owns hydroelectric plants on the following rivers: Piave, Adige, Cismon, Cellina, Isonzo, Reno, and Brasimone. Some of the larger hydroelectric plants of the system are: Padalto, Nove, Caneva, Pelos, Santa Lucia, Agordo, Canale Plava. The Mestre (Porto Marghera) steam plant functions as reserve and stand-by for the system.

The regions of Trieste, Monfalcone, and Istria are served through the Opicina transformer station, which collects power from the Isonzo and Piave River plants over two 135-kv. lines. Three lines of the same tension--from the Santa Croce plants, from Agordo and (partly) Cardano via the Vellai (Feltre) substation, and from Pelos--end at the Mestre substation and supply Venezia and its industrial center of Porto Marghera on the mainland. The Emilia-Romagna region is connected with the Santa Croce plants of Adriatica by a 135-kv. line to Porto Maggiore sub-

station. Porto Maggiore in turn is joined to Bologna-Arcoveggio substation, which supplies the Bologna area. The Padova district is fed by a line running from Porto Marghera to Verona, where it meets another 135-kv. line, coming from the Trentino.

E. Minor Networks and Industrial Plants.

1. Societa Industriale Trentina. The Societa Industriale Trentina owns and operates the public utilities in the city of Trento and in the surrounding areas of the Trentino district. The corporation was formed in April 1927, with its business office in Trento (Corso Regina Margherita 11) and was capitalized in 1936 at 60,000,000 lire. Its electric power properties consist of two hydroelectric plants on the Sarca River--Fies and Dro--and transmission lines at 70 and 20 kv. Most of the current generated at the Sarca plants is sent to Verona over a 125-kv. line. Important industrial consumers in the district are supplied almost entirely by their own plants.

2. Azienda Elettrica Municipale di Torino. Operating in SIP territory, but independent of it, is the Azienda Elettrica Municipale di Torino, incorporated February 1908, with business offices in Torino (Via Bertola 48), capitalized in 1936 at 306,600,000 lire. Its plants on the Dora Riparia River (Susa and Chiomonte) are linked with Torino through the Pianezza substation. The Rosone plant on the Orco River sends its energy to the Martinetto substation. A steam plant in the city is used as reserve and stand-by.

3. Azienda Elettrica Municipale di Milano. Incorporated in January 1911, with business offices in Milano (Via della Signora 8, 10, 12), and capitalized at 262,000,000,000 lire, in 1935, this city-owned enterprise contributes a considerable portion of the electricity supply of Milano. Its steam plant in the city functions as a reserve plant. Its hydroelectric plants in the Adda Basin--Isolaccia, Grosotto, Roasco Inferiore--supply energy to Milano over a 135-kv. line.

4. Montecatini. The Montecatini concern, Italy's largest producer of chemicals and electro-chemical products, is also one of its largest power producers and consumers. Current consumption in 1941 was about 2,000,000,000 kwh., 15 percent over 1940. This consumption, half of which was met by the plant's own power stations, represented 13 percent of total Italian electricity consumption. Montecatini owns important power plants: Marco (Mori), Marlengo, Ponte Gardena, Bressanone (part of its output allocated to the State railways), Tel (leased from its owners, the cities of Bolzano and Merano), and Battigio. A large part of the energy generated is used in the Trentina, by the company's plants at Sinigo (Merano), Bolzano, and Mori. Villa d'Ossola and Domodossola in the Toce Valley, are supplied partly from Battigio and partly from the Edison network. The Novara and Cesano-Maderno plants are supplied also by Edison. Montecatini's two plants near Savona--Vengio and San Giuseppe al Cairo--buy their current from the SIP network. Recently, a contract is

reported to have been signed for the connection of the Montecatini hydroelectric plants with the steam plants of the German R.W.E. system in the Rhine Valley.

5. S.A. Nazionale "Cogne". This manufacturer of high-grade special steels owns the Chavonne, Champagne, and Aymavilles hydro plants in the Dora Baltea valley. Its business office is in Torino (Via S. Quintino 28), and its capitalization in 1936 was 180,000,000 lire. An expansion program was under way in 1940.

6. S. A. Acciaierie e Ferriere Lombarde Falck. Lombarde Falck, one of the largest iron and steel producers in Italy, owns hydroelectric plants in the Adda, Tanaro, and Magra Basins, which supply its mills at Sesto San Giovanni and sell surplus energy to distributing companies. Incorporated in January 1906, with its business office in Milano (Corso del Littorio 6), it was capitalized in 1936 at 180,000,000 lire. It owns a steam plant, Sesto San Giovanni, and the following hydroelectric stations: Boffetto, Venina, Armisa, Vedello, Zappello, Vobarno, Teglia, Spigno Monferrato, with a total output of about 450,000,000 kwh., most of which is consumed by the company.

7. Soc. Alluminio Veneto An. (S.A.V.A.). Soc. Alluminio Veneto An., Italy's second largest producer of aluminum, obtains power for its Porto Marghera plant from the San Silvestro and Moline hydro stations, owned by its subsidiary the Societa Idroelettrica del Cismon, over a 125 kv. line. Cismon's business office is in Venezia (Riva del Carbon 4090); and its capitalization in 1936 was 20,000,000 lire. Supplementary power is obtained from the Adriatica network.

IV. Administration and Law.

A. Government Policy Toward Electric Utilities.

The basic principle of Italian governmental policy toward electric utilities is that these are public services in which the state has a vital interest and that authority to regulate and direct the growth and activities of the electrical industry is properly a function of the state. According to this policy, organization, development, and at least initial operation should be entrusted to private enterprise, under state control. Once fully developed, the industry should probably be taken over by the state. The question of the circumstanstances under which nationalization should take place, and even the question as to whether it should occur, is not answered by existing legislation; but full powers, and even methods to be used in taking the step, are specifically provided.

This policy was formulated at about the end of the nineteenth century, and it has been altered only slightly by the Fascist regime. It emphasizes national self-sufficiency in power, and therefore encourages even un-economic hydroelectric development and the use of low-grade domestic fuels for thermal plants. It discourages all international exchange of electric current. It also extends the pre-Fascist concept of regulation in the public interest, in applying to the electric power industry the general Fascist system of syndicates and corporations to govern labor relations, trade agreements, rates, and,

theoretically, all other phases of economic policy and of management. It has not announced any decisions concerning future nationalization.

B. Laws and Their Administration

There is set forth below a summary of existing (pre-1943 armistice) legislation on important problems of electricity production, transmission, and consumption, and a discussion of the organizations, public or private, which execute these policies. The state agencies involved are recapitulated in paragraph C, which follows this summary.

1. State Control in the Public Interest

a. Use of Water Resources. The Minister of Public Works is responsible for assuring the optimum use of all waters of the public domain, with proper balance of water-use for human consumption, industries, fishing, transport, irrigation, electricity-generation, etc. The basic means of control is the power to grant concessions (concessioni) to private parties for specific privileges of water-use. In order to coordinate activities in a particular area or basin, users of water may be organized into a consortium (consorzio) under state guidance. Certain technical provisions have been established for dams and water-storage.

When necessary, the Minister of Public Works may appoint regional commissars (commissari) with authority to coordinate and control production, distribution, and consumption (including restrictions on consumption) of electric

power in a province.

Legal controversies over water-use rights are handled by eight regional courts constituted for that purpose--Torino, Milano, and Venezia, in the north--and a Superior Tribunal for Public Waters (Tribunale superiore delle acque pubbliche) in Roma, for appeals.

(1) Waters of the Public Domain. The royal decree of December 11, 1933, number 1775, unifies and supersedes all previous legislation on water exploitation, and makes minor additions. In this decree, all surface and underground inland waters in the nation are declared to be a part of the public domain. All bodies of water are listed in the Ministry of Public Works.

(2) Concessions. The state has recognized the rights to water-use of persons or firms which had legitimate titles before the procedure for concessions was established in 1919. All persons or firms which have begun use of waters since then have been obliged first to obtain a concession from the Ministry of Public Works. Users are divided into two classes--large and small--according to the size of their projects (hydro-electric installations under 225 kw. are "small"; those over 225 kw are "large"). The procedure for obtaining concessions is slightly different for these two classes.

A complete list of all concessionaires in each province is kept by the provincial office of the Ministry of Finance.

Applications for concessions are submitted to the competent local office of the Corps of Civil Engineers (Ufficio)

di Genio Civile), addressed to the Minister of Public Works. They must be accompanied by a fee of at least 50 lire (the fee is proportionate to the size of the project). The application is then published in the provincial government bulletin (Foglio), and when it reaches the Ministry in Roma, it is published in the state Official Gazette (Gazzetta ufficiale). In Mantova and the three Venetian provinces, the application must be approved by the Reale Magistrato alle acque per le provincie Venete e di Mantova, a special regional magistracy, before it may be forwarded to Roma. Any competitive application for the same place or water supply, or any objection from existing operators in the area, must be expressed promptly after the application is published.

A field engineer of the Genio Civile visits the proposed site of the project with the applicant. In cases which concern them, the Ministry of Communications (usually where transmission lines are projected), one or more of the military ministries, the Ministry of Agriculture and Forestry (usually where irrigation projects may conflict or may be planned as part of the project), and the Ministry of the Interior may be represented on these preliminary visits. The state agents then prepare their recommendations as to the desirability of approving the application, and a full set of instructions is sent to the applicant, covering not only the general regulations applying to the type of project, but also specific directions as to the type of construction material, the engineering plans,

the amounts of water to be used, etc.

Small concessions, where there is neither competition nor objection, may be authorized by the Genio Civile office. Other small concessions must be referred to the Minister of Public Works and the Superior Council of Public Works (Consiglio Superiore dei lavori pubblici). In any case, official approval is signified by ministerial decree of the Ministry of Public Works, concurred in by the Ministry of Finance.

Large concessions are approved by the Minister and the Superior Council of Public Works. Official authorizations take the form of royal decrees, sponsored jointly by the Ministers of Public Works and of Finance. It appears that the Minister of Finance is involved in the procedure in order that he may get all necessary information with which state taxes can be exacted (see section e, below) and because many concessions entail state subsidies or other financial arrangements which fall within his purview. Consent of the Minister of Corporations is also required for "large" projects of plant construction for production, transmission, or distribution, before concessions may be granted.

In cases of competing applications, approval is given to the project or projects promising the most desirable use of the water, with the most favorable prospects of successful operations (the financial and managerial soundness of the applicant are considered, for example). If the granting of a new concession deprives an established concern of its site or its water, or puts other burdens upon it, the new concessionaire is obligated to compensate the other concern, either

in money or by providing free as much power as the other concern formerly derived.

Commercial companies operating concessions must file with the Ministries of Finance and Public Works information as to the purposes of the concessions, the equipment available for power production, transmission, and distribution and their organizations and backgrounds, which must be acceptable to both Ministries before actual operations may begin.

Any changes in organization or circumstances of the companies must be reported to the Ministry of Public Works within thirty days. Royal decree number 2101, of November 5, 1937, strengthened the power of the Ministry of Public Works to terminate a concession before its expiration date, on grounds on non-compliance with rules, failure to produce as much as was promised, excessive delay in construction, etc.

If the state has a project which it wishes to have carried out, it may advertise for bids, which are handled according to the same procedure as that which governs action on applications initiated by private companies. The state may also reserve all or a part of a water-course for a specific use--excluding all other types of operations.

The maximum duration of a "large" concession is sixty years, and of a "small" one, thirty years; these may be extended, however. A concession which has expired may not be turned over by the state to a different company unless due cause is shown. The basic purpose of the time limit is to provide an occasion,

at its expiration, for the Government to nationalize the electric plants (see 2, below).

All concessionaires are required by law to keep in good working order all facilities having directly to do with the flow of water (penstocks, tailraces, canals, etc.). Special orders of military authorities must be complied with and in such cases, the state assumes up to two thirds of the cost of any adjustments required.

All "large" installations are recognized as public utilities, and are endowed with the power of eminent domain. This power is used especially in laying out transmission lines. The state may give the same recognition to "small" plants, in individual cases.

(3) Dams and Water Storage. Since water power resources of Italy must be husbanded during the seasons when water is plentiful in order to prevent shortages during the other seasons, legislation on this subject places emphasis both on encouragement of dam-building and on protection against dam-failures. The state (Ministry of Public Works) has built a number of dams, but many are constructed by private enterprise, specifically, for hydroelectric power. In some instances, a single dam is used for such diverse purposes as production of electricity, irrigation, and flood-control.

The principal legislation on the subject of dams and water-storage was codified and brought up to date by the royal decree of December 11, 1933, number 1775. Administration is

the responsibility of the Servizio Dighe (Dams Service), a part of the Servizio Tecnico (Technical Service) of the Ministry of Public Works. The means of control of privately-built dams is the concession (see (2) just above). The state provides liberal subsidies to assist private builders of dams.

All dam sites and plans must be approved (1) by the Ministry of Public Works, acting through the local office of the Genio Civile in consultation with a civil engineer of either the Royal Mining Corps (Corpo reale delle Miniere) or the Royal Geological Committee (Regio comitato geologico) and (2) by the local defense authorities. Construction is authorized by the Ministry of Public Works, and is supervised by the Servizio Dighe (Dams Service). Detailed descriptions, specifications, and monthly operating records are on file at the offices of the Genio Civile. Reports on semi-annual routine inspections made by the Genio Civile are forwarded to the Servizio Dighe.

(4) Area Consortia. Because of the extensive development of water-use, particularly in the Alpine basins, the state has attempted to achieve the optimum use of water in individual basins by bringing together into area Consorzi (consortia) all persons, firms, and government agencies which have any interest, for whatever purpose, in the use of waters in the basin. In this way, overall plans can be made, for example, to use a single reservoir for city water supplies and electricity generating, or for irrigation and recreation.

Also, conflicting plans involving different activities (inland navigation versus dam-construction, etc.) can be discussed and binding decisions made. An analogy might be drawn between the purposes (but not the amount of authority) of these consortia and those of the Tennessee Valley Authority in the United States.

Provision for the organization of these consorzi is made in the 1933 law. The law was based on favorable experience with the Consorzio of Ticino (for Lake Maggiore) and that of Oglio (for Lake Iseo).

b. Thermal Electricity Production. The technical regulation of thermal electric plants is the responsibility of the National Association for Combustion Control (Associazione nazionale per il controllo della combustione), which is called by law a "compulsory consortium," made up of all users of national combustibles, who are subject to its regulations. This includes a wide variety of industrial firms. The Association is closely identified in personnel and policy with the National Fascist Confederation of Industrialists, and is under the administrative control of the Minister of Corporations.

Authority for regulation of steam electric-power plants is the royal decree law of July 9, 1926, number 1331 (made into law on June 15, 1927, as number 1132). This law establishes the Association, and gives it authority to supervise construction and repair, and to determine the quality of equipment, the type of fuel to be used, the efficiency of operation, and the technical and safety rules to be followed, for all coal and gas burning industries. As applied to the electric industry, this includes:

(1) Elimination of Steam-Generated Electricity. By 1936, the Association was to have completed a program of replacing production of steam-generated electricity by hydro-electric current and retiring steam plants from all except reserve operation, wherever this policy could be applied with

technical and economical convenience. The few steam plants which have been kept in full-time operation are in districts which are relatively inaccessible to hydroelectric generating stations.

(2) Efficiency of New Steam Plants. The Consiglio tecnico (Technical Council) of the Association is responsible for inspecting all new steam plants and for approving their design and function.

The Consiglio can forbid a plant to operate if it fails to meet the standards.

(3) Reports to the Association. Plants are required to report to the Association all changes in ownership, or condition of equipment; detailed reports and data are also required from all companies starting new plants or acquiring new equipment.

(4) Testing and Inspections. The Consiglio tecnico sends agents to test all equipment newly acquired or reported repaired, etc. It makes routine inspections as well. These agents are authorized to serve as state judicial police, for purposes of enforcing the regulations of the Association.

(5) Technical and Safety Regulations. Some of the technical and safety regulations are set forth in the law cited; other pertinent legislation prior to 1934 includes:

(a) December 1, 1927, decree of Minister of National Economy, published in Gazzetta ufficiale of January 23, 1928, number 18, and

(b) September 27, 1931, decree of Minister of National Economy, published in Gazzetta ufficiale of September 12, 1931, number 211.

These regulations cover such points as boiler pressures, valves, and gauges. Necessary qualifications for persons to be employed as attendants are set forth in the basic law of July 9, 1926.

(6) Permission to Build or Operate Steam Plants. Permission must be obtained from the Association before any steam plant may be constructed or placed in operation. The Minister of Corporations must also give his consent.

(7) Other Regulation. Regulation of transmission, tax levies, and such subjects are, on the whole, uniform for all electricity whether generated by steam or water-power. These subjects are treated separately in this summary of legislation.

c. Transmission Lines. State regulation of transmission lines was consolidated in 1926 (decree law number 2373, of December 16) under the Ministry of Public Works. The law on the subject was unified in the 1933 law frequently referred to above.

Governmental authorization is required for any new lines; the provincial prefect, with the advice of the local Genio Civile office, must act on applications to build lines of less than 5 kv., and the Servizio Idrografico (under the Minister of Public Works), advises the Minister, whose authorization is required for lines of over 5-kv. The Ministry (probably the Servizio Idrografico) keeps a complete register of all transmission lines and transformers, along with its register of plants and distribution systems.

Specific regulations on the strength of wires, height of pylons at road crossings, and many other technical points are set forth in the 1933 law, and enforced by the Genio Civile, working under the direction of the field offices of the Servizio Idrografico. The technical plans for all new lines must receive the approval of the Ministry of Communications before the Ministry of Public Works will permit construction to begin. Builders of transmission lines connected with "large" concessions may exercise the power of eminent domain, and other lines may be invested with that prerogative.

A Consultative Committee on Transmission and Distribution of Electric Power (Comitato consultivo per trasmissione e scambio dell'energia elettrica) was established in 1928, with members from both government and industry. Its studies were to include general policy on transmission and

distribution, and also the electrification of agriculture. The importance of this committee is not believed to be great; it is not even certain that it still exists.

d. Rates. Rates for industrial supply are arrived at by negotiation between the electric company and the purchasing industry, and are, as a rule, fixed by long-term contract. Rates for household users are generally fixed by contracts between the electric company and the communal government concerned. Disputes as to rates are settled by a court of arbitration for electricity rates (Collegio arbitrali per i prezzi della energia elettrica), a part of the regular judicial system, from which appeal may be had only if the question is one of jurisdiction.

Rate agreements must be concluded within general limits fixed by the Corporation of Water, Gas, and Electricity. The state has from time to time imposed general limits on rates, permitting the electric companies to raise rates or requiring them to reduce rates when they were markedly out of proportion to the general price level and the cost of electricity production. A decree of the Ministry of Corporations froze rates at the October 5, 1936 level, until the end of 1940. What subsequent disposition of rates has been made is not known, although it seems altogether probable that the general price freeze as of July 30, 1940 must have

included electricity rates. Although the Ministry of Corporations has been notably unsuccessful in its efforts to hold down prices generally, it is probable that electricity rates were not much increased, because of the contract method of rate determination and the power of the Collegio arbitrali.

An inter-ministerial Committee for the Coordination of Supply and Prices was established in 1942 with Mussolini as its head. Whether or not this committee has exerted any influence on electricity rates is unknown.

The average family electric bill in the nine principal cities of all Italy was reported in 1935 as 173 lire per year, of which 72 lire went for state and local taxes on consumption.

c. State Taxes and Fees. The state derives revenue from electric utilities by three types of levies: fees for services and property taxes, paid directly by the producing plant; taxes on the exchange or sale of current; and taxes on consumption, collected by the distributing companies and transmitted to the state.

A fee is charged for submission of an application to obtain a concession, primarily to cover part of the cost of processing the application. Hydroelectric plants must also pay twelve lire per year per nominal horsepower, which helps to support the Servizio Idrografico. There is likewise a registration fee for steam plants, which goes to the National Association for Combustion Control. The Association

also collects an annual assessment from plants under its control, and requires the plants to reimburse it for the expenses of all inspection visits and tests.

The taxes on sales and exchanges of electric power are paid on such transactions at the same rates and under the same conditions as they are paid for any other commodity. Property taxes are also levied in the usual manner.

The tax on consumption has been increased gradually during recent decades. Table 9 lists the rates established by royal decree law on January 16, 1938.

TABLE 9. ITALY: STATE TAX RATES ON ELECTRICITY CONSUMPTION, 1938

Type of use	Tax rate (centisimi per kwh.)
Domestic and commercial lighting	40
Other domestic and commercial uses	1.5
Non-lighting uses in chemical or metallurgical industries	1.0
Electro-metallurgical electric furnaces	0.6

Exemptions included municipal or other public lighting, generation or transformation of electricity, industrial electro-chemistry, production of steam for electro-metallurgical uses, laboratories and lecture halls in public academic or scientific institutions, telephone and telegraph, state railroads, ships and vehicles with their own generators, and homes and offices of diplomats if reciprocity existed with

the country they represented.

All operators of electric power plants are required to register with the Ufficio tecnico (Technical Office) of the Ministry of Finance, which is in charge of collections of the state consumption tax. It is possible that this office issues licences to implement its control.

f. Foreign Trade. Since 1925 (royal decree law 2479, October 21), a formal government authorization has been required for each transaction involving importation or exportation of electric power. Each authorization is for a specified amount of power and a limited length of time. Each one is made by royal decree sponsored jointly by the Minister of Public Works and the Minister of Foreign Affairs.

A protective tariff of 2.5 centisimi per K.W.h., which had been enforced for some time, was revoked in 1942 because of Italy's power shortage.

g. Labor Relations. All collective labor relations are handled within the Ministry of Corporations. Figure 2 shows the parts of that Ministry having to do with electric utilities. (For a thorough-going treatment of the organization and functioning of the corporate and social insurance systems under fascism, see the British Italian Handbook).

The National Syndicate of Private Electric Company Workers represents labor in private industry, and the National Fascist Federation of Electric Company Operators represents employers. The National Syndicate of Municipal

Industry Workers negotiates with the National Fascist Federation of Municipal Industrial Agencies.

The standard corporate pattern is followed in negotiations between operators and workers in the municipal utilities: local matters are handled directly on the local level, but the decisions are subject to consolidation at the national level. Both the workers' syndicate and the employers' federation are organized locally wherever there are municipal utilities.

Instead of having a local organization wherever plants are located, the Federation of Electric Company Operators has seven regional units, corresponding to the seven large producing and distributing groups in the electrical industry. The employee's syndicate contemplated abolishing its local units and reorganizing on the same group basis, but had not taken steps in that direction in 1938. Collective contracts are made by the regional group of employers concerned with the individual local units of the workers' syndicate; such contracts are, of course, subject to consolidation and review at the national level.

Member companies of the large groups are required to leave all collective bargaining to their parent companies.

h. Rationing. Rationing is probably a function of the Ministry of Corporations, perhaps shared by the

Superior Council of the Ministry of Public Works.

2. Eventual Nationalization. Provisions for eventual nationalization of hydroelectric power made in the pre-Fascist decree of October 9, 1919, were retained in the 1933 law on electric power.

When the concession for a hydroelectric installation runs out (30 years for "small," sixty for "large" plants), all works having to do with harnessing the water itself (dams, penstocks, canals, piping, tailraces, etc.) are to pass without payment to state ownership, unless the state decides to renew the concession. All buildings, machinery, transmission systems, and other physical property used in the production or distribution of electric power may become state property by purchase at a price equal to the value of the property, without reference to the value of future income which the property would otherwise yield to the concessionaire.

Because the Ministry of Public Works has the option of either extending the concession at its expiration or nationalizing the plant, it is evident that the law intends for future government authorities to make the decision as to whether or not to use the power and procedure on the statute books.

3. Rights and Privileges of Local Governments.

a. Municipal Ownership and Operation. Since 1903,

state legislation has encouraged municipalities to purchase or build and operate their own public utilities, including electric systems. The principal laws currently in force are the Public Services Direct Operation Act of March 29, 1903, royal decree number 3447 (December 30, 1923), and royal decree number 2578 (October 15, 1925).

Municipal utilities are governed by boards of three to seven directors, elected by the communal council. The boards choose managers, who are the operating heads of the utilities. The municipal utilities are independent of the communal council on most matters of policy and finances, although the commune must stand back of loans arranged through the Savings and Loans Bank (Cassa Depositi i Prestiti), a state-controlled bank. The municipal utilities have no advantage over private companies as far as taxes are concerned.

b. Revenues and Regulatory Powers. Hydroelectric concessionaires must supply up to 10 percent of their output of current to towns in the immediate vicinity, at the cost of production. A concessionaire must also pay its neighboring towns two lire per horsepower for all current transmitted more than fifteen kilometers (about 9 3/8 miles) distant from the plant. For power transmitted out of the province, one-fourth of this amount goes to the provincial government and three-fourths to the commune.

Local taxes on consumption of electric current were limited by the local finance law of September 14, 1931. The tax which may be levied is adjusted to the size of the commune: a city with more than 200,000 population may tax up to 25 centisimi per kwh., while for towns under 10,000, the tax rate may not exceed twelve centisimi per kwh. Under special conditions, the Ministry of Finance may approve exceptions to the schedule.

Still another privilege of local governments is exemption from payment of state tax levied on all consumption of electric power. Only power actually used by the governments(provincial or communal) is included in this exemption.

The function of the province is passing upon construction of transmission lines of under 5 kv. has already been mentioned.

C. Government Agencies.

The following list mentions every agency of the state known to play some part in the administration of legislation affecting public utilities, and refers by number and letter to the paragraph or paragraphs in IV-B, Laws and Their Administration, above, in which each agency's function has been mentioned.

1. Ministry of Public Works: 1-a-(1); 1-a-(2); 1-a-(3); 1-c.
   Refer to figure 1, Parts of Ministry Affecting Electric Utilities in North Italy.
2. Ministry of Corporations:
   Refer to figure 2, Parts of Ministry Affecting Electric Utilities.
3. Ministry of Finance: 1-a-(2)
   a. Ministero per i Finanze (Minister of Finance):1-a-(2)
   b. Ufficio tecnico (Technical Office): 1-e
   c. Provincial Offices: 1-a-(3)
4. Ministry of Agriculture and Forestry: 1-a-(2)
5. Military Ministries: 1-a-(2); 1-a-(3)
6. Ministry of Communications: 1-a-(2);1-c
7. Ministry of Foreign Affairs: 1-f
8. Committee for the Coordination of Supply and Prices: 1-d
9. Casse depositi i prestiti: (Savings and Loans Bank) 3-a
10. Corpo reale delle miniere: (Royal Mining Corps) 1-a-(3)
11. Regio comitato geologico:(Royal Geological Committee) 1-a-(3)

PARTS OF MINISTRI AFFECTING ELECTRIC UTILITIES IN NORTH ITALY

Ministero (Minister)
Sottosegretario di stato (Undersecretary of State)
1-a-(2);1-f

Ministero di finanze (Minister of Finance)

Consiglio superiore (Superior Council)
1-a-(2);1-h

Sezione III (third section)
1-a-(3)

Comitato consultivo trasmissione e scambio dell'energia elettrica (Consultative Committee for Transmission and Distribution of Electric Power).
1-c

Servizio tecnico (Technical Service)
1-a-(3);1-c

Comitato centrale per la mobilitazione dell'energia elettrica (Central Committee for Mobilization of Electric Power)

Direzione generale acque e impianti elettrici (General Directorate of Waters and Electric Plants)

Direzione Generale Affari Generali (General Business incl. personnel)

Ragioneria Centrale (Finance Office)

Servizio dighe (Dams Service)
1-a-(3)

Servizio idrografico (Hydrographic Service).
1-c
1-e

Ufficio per la mobilitazione dell'energia elettrica (Office of Mobilization of Electric Energy)

Servizio di osservatori industrie elettriche (Service of Observation of Electric Industry.

Reale magistrato alle acque per le provincie venete e di mantova (Royal Magistracy for Waters of Venice Provinces and Mantova)
1-a-(2)

Circolo di ispezione per il Po (Po Inspectorate)

Ispettorati Compartimenti Genio Civile (Regional Inspectorates of the Civil Engineers' Corps)

Field Offices in North:

Bologna
Genova
Parma

Local Offices:

Belluno	Tolmezzo
Bolzano	Trento
Este	Treviso
Gorizia	Udine
Mantova	Venezia
Padova	Verona
Rovigo	Vicenza

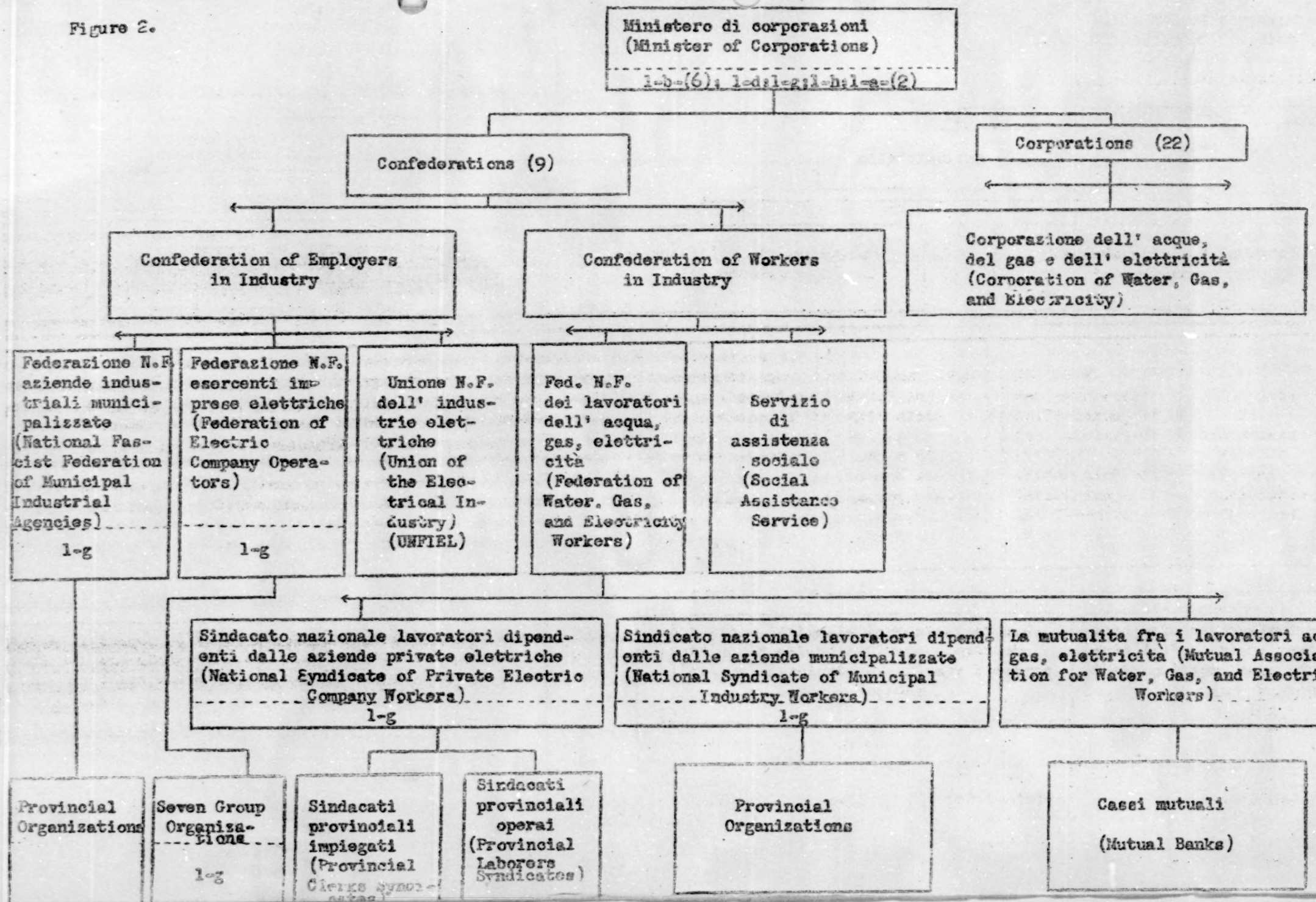
Regions in the North (Provinces comprising each): Alessandria, Aosta, Cuneo, Novara, Torino, Vercelli; Bergamo, Brescia, Como, Cremona; Milano, Pavia, Sondrio, Varese; Fiume, Pola, Trieste; Genova, Imperia, La Spezia, Savona; Bologna, Ferrara, Forli, Modena, Parma, Piacenza, Ravenna, Reggio Emilia.

Uffici di genio civile (Local Offices of Royal Civil Engineers Corps, usually found in chief towns of provinces). 44 in North Italy; listed in Appendix VII.
1-a-(2);1-n

Figure 2.

ITALIAN CORPORATE SYSTEM

PARTS AFFECTING ELECTRIC UTILITIES


Ministero di corporazioni
(Minister of Corporations)
1-b-(6); 1-d;1-g;1-h;1-a-(2)
Confederations (9)
Corporations (22)
Confederation of Employers in Industry
Confederation of Workers in Industry
Corporazione dell' acque, del gas e dell' elettricità (Corporation of Water, Gas, and Electricity)
Federazione N.F. aziende industriali municipalizzate (National Fascist Federation of Municipal Industrial Agencies)
1-g
Federazione N.F. esercenti imprese elettriche (Federation of Electric Company Operators)
1-g
Unione N.F. dell' industrie elettriche (Union of the Electrical Industry) (UNFIEL)
Fed. N.F. dei lavoratori dell' acqua, gas, elettricità (Federation of Water, Gas, and Electricity Workers)
Servizio di assistenza sociale (Social Assistance Service)
Sindacato nazionale lavoratori dipendenti dalle aziende private elettriche (National Syndicate of Private Electric Company Workers)
1-g
Sindicato nazionale lavoratori dipendenti dalle aziende municipalizzate (National Syndicate of Municipal Industry Workers)
1-g
La mutualita fra i lavoratori acque, gas, elettricita (Mutual Association for Water, Gas, and Electricity Workers)
Provincial Organizations
Seven Group Organizations
1-g
Sindacati provinciali impiegati (Provincial Clerks Syndicates)
Sindacati provinciali operai (Provincial Laborers Syndicates)
Provincial Organizations
Cassi mutuali
(Mutual Banks)

12. Ministry of the Interior: 1-a-(2)

13. Tribunale superiore delle acque pubbliche (Superior Tribunal for Public Waters): 1-a-(2)

14. Collegio arbitrali per i prezzi dell'energia elettrica: Court of Arbitration for Electricity Rates): 1-d

15. Associazione nazionale per il controllo delle combustione (National Association for Combustion Control): 1-b; 1-b-(1); 1-b-(3); 1-b-(4); 1-b-(6).

a. Consiglio tecnico (Technical Council): 1-b-(2); 1-b-(4)

V. Problems and Suggestions.

A. Condition of Electric System at Time of Occupation.

1. Probable Destruction. When Axis forces withdraw from North Italy, they are almost certain to undertake systematic destruction of the power plants in the area. They will probably accomplish this by wrecking heavy generating equipment with explosives. To the extent that they are thorough in this, they will halt the industrial system and cut off household and commercial service in the entire area, for the Italian economy is geared to the highest possible utilization of hydroelectric power.

Damaged steam plants will probably be restorable to service within a few months, if the factories manufacturing equipment are not destroyed at the same time. Hydroelectric plants, however, will probably be eliminated as a source of current, because difficulties of construction of equipment, etc. would make their repair or rebuilding a matter of years. Unless fortunate accidents spare some of the hydroelectric plants from destruction, or unless it proves possible to improvise makeshifts by combining equipment from incompletely damaged plants, the power supply will depend altogether on repaired steam plants. Allied occupying forces should, to the greatest extent possible, supply their electric current needs by providing mobile generating units and importing Diesel fuel.

That the energy output of steam plants will be only a small fraction of total energy formerly produced is evidenced by the following figures: In 1937, North Italy had 136 thermal plants

with a total installed capacity of 449,570 kw., as compared with a total of 747 hydroelectric plants whose installed capacity totalled 3,395,361 kw. These thermal plants produced 161,052,600 kwh., as against a hydroelectric production of 10,726,470,300 kwh. The plant factor for the thermal plants was very low at the time in accordance with their functions as reserve and emergency installations (358 hours per year per installed kw.; 4.1 percent). This could certainly be increased--possibly up to 40 or 50 percent--if the thermal plants were used as base load; and production would rise accordingly.

Table 10 shows the number and total installed capacity of thermal plants of over 1,000 kw., classified by regions, as of December 31, 1937. Plants of over 5,000 kw. are listed individually. It can readily be seen that these larger plants are all located in the main cities of the region.

TABLE 10. NORTH ITALY: THERMAL PLANTS OF OVER 1,000 kw. INSTALLED CAPACITY (December 31,1937)

Region	No. of plants of over 1000 kw. installed capacity	Total installed capacity of plants of over 1000 kw.	Names and capacity of plants of over 5000 kw.
Piemonte	12	55,155	Torino-Martinetto 17,700 Aosta 11,600 Torino 8,000
Lombardia	14	125,168	Milano 32,000 Turbigo 29,000 Castellanza 21,678 Brescia 15,400 Legnano 8,750
Venezie	11	89,670	Mestre 57,000 Fiume 8,450
Liguria	7	102,425	Concenter 53,000 Sampierdarena 17,000 Savona 17,000 La Spezia 11,025
Emilia	6	43,155	Piacenza 26,000

2. Survey of Extent of Damage. The first necessary step will be to survey the electric production, transmission, and distribution system, to see how much of it is still serviceable and how seriously the remainder is damaged. Appendices I, II, IV, and V provide the latest available data on the system before the 1943 Italian armistice. These data should be brought up to date by the survey. Highly qualified electrical engineers should attempt to compile this basic information province by province, indicating which plants are still serviceable, which are in need of only minor repairs, which are in need of major repairs, and which could not be reconstructed without great effort and after considerable time. The same type of information will be needed for the transmission and distribution systems. In the survey of the plants, an important point to be noted would be the type of fuel burned in the thermal plants.

3. Schedule of Priority of Needs. Simultaneously with the investigation of the condition of electric plants and lines, there should be drawn up a schedule of needs covering the activities which most urgently need to be supplied with current. This schedule should be organized with emphasis on the needs by provinces or other geographic regions. The high priority needs for electricity will probably include, among many other things, pumping for public water supplies, hospitals, airfields, electrified railroad services, telephone, telegraph and radio communications, and illumination in cities to aid in restoring and maintaining public order. Also important will be the matter

of power supply to essential food, construction, and other industries.

These two basic information sources, the survey and the schedule, should be brought together and used for deciding which parts of the electric system it is possible to place in operation, and which parts of the area should be served. Availability of electric current should, of course, enter into decisions as to placing or selecting airfields, hospitals, camps, and other centers.

B. Administrative Organization for Initial Restoration. Initial restoration activities, based on the conclusions drawn from the needs-priority schedule and the survey of destruction, should be handled by a temporary Allied agency, rather than by an Italian governmental organization. It would not be possible to achieve rapid reconstruction of the electricity system by use of established Italian agencies. The Italian agencies in the field are established to review and supervise, rather than to take positive steps in construction, engineering, and management. The agency responsible for steam-generated electricity (National Association for Combustion Control) is responsible for all forms of power and heat derived from coal and gas--it is not purely an electricity regulating agency. Likewise, most parts of the Ministry of Public Works dealing with electricity are also concerned with other uses of water or other public works activities. In neither agency is there a section which could be dealt with as the single executive authority for all electric utilities.

Use of the existing organizations would thus entail sweeping reorganizations, or else baffling divisions of authority. In addition, the importance of prompt restoration of a dependable supply of electricity, from the standpoints of both operating and civil affairs troops, will require a thoroughly reliable controlling agency. Delay, confusion, or outright sabotage such as might result from the presence of Fascists in Italian agencies would be especially costly in this field. Another consideration of some importance is that certain of the equipment, fuel, and personnel needed to restore and initially to operate the system will probably have to be provided by the Allies, and will have to be supervised and protected.

A top-flight Allied administrator should head the Allied agency. Attached to him as staff-assistants should be an Allied electrical engineer, and an Italian engineer thoroughly familiar with the Italian power system. If possible, the latter should have had a responsible position in either the Ministry of Public Works or the National Association for Combustion Control. The administrator should participate in over-all policy and administrative meetings of the occupying authorities, in order better to learn where power should go. It is essential that he maintain particularly close relations with agencies set up to administer other public utilities and fuels.

This agency will require the services of a staff of highly competent electrical engineers. These men will be needed in

the first stage of Allied occupation to help organize and execute the survey. Liaison should be established with the Italian governmental agencies listed in IV-C above, in order to gain information and to obtain the technical services of their staffs and of the private technicians and skilled workers which they have listed.

Every effort should be made to utilize the field staffs of the Genio Civile, the Servizio Idrografico, and the National Association for Combustion Control, without organizational change. They could be grafted onto the central authority of the Allied agency, insofar as their electric-utility functions are concerned.

C. Problems and Suggestions for Initial Restoration. Once the decision as to where to begin has been made, the restoration problem will fall into five parts: (1) repair and replacement of equipment, (2) repair crews, (3) transmission of power, (4) provision of fuel for thermal plants, and (5) management and operation of plants.

1. Repair and Replacement of Equipment. The characteristics of important production, distribution, and transmission equipment are set forth in appendices II, IV and V. Additional information as to details can be found in the offices of the Genio Civile, the Servizio Idrografico, and the Roma office of the Direzione generale per i acque e impianti elettrici of the Ministry of Public Works, and in the office of the Consiglio

Tecnico of the Association for Combustion Control. The survey of destruction will complete this picture, and indicate what new equipment or parts and what repair work are needed.

Italy's virtual self-sufficiency in production of high-grade electrical equipment should make it possible to obtain new machinery and parts. Appendix VI lists important firms known to have been manufacturers of electrical equipment before the beginning of the war. It is possible that many of these have been bombed out, or that those located in the major northern industrial cities may have been destroyed (and it will be noted that the industry is heavily concentrated in the north), but there should be enough of the industry extant to fill at least a part of the needs of the restoration program. Supplies of equipment might possibly be augmented by purchase from Swiss firms, such as Brown-Boveri in Zürich, if transportation can be obtained and if these firms are not already working to capacity on previous orders.

2. Repair Crews. Allied occupying forces should be prepared (if possible, in advance of occupation) with crews of competent technicians and workmen who can be moved rapidly from plant to plant and line to line, to make repairs and to undertake whatever reconstruction is deemed essential by the electricity authority. Unless the Allied armies are prepared to provide this service with military personnel, it is suggested that an early start be made in organizing crews from among any experienced electrical workmen and engineers available in southern Italy. If

such crews could move northward behind the surveying engineers, working as they go, in Central Italy, considerable savings in time and in fuel for mobile generators could be effected. They should also become better-organized and more efficient before being required to undertake the most difficult part of their work--that in the highly developed electric system of the north.

Persons who are familiar with the particular machinery of individual plants should be recruited to assist in the work of the repair crews. Such persons could be located from lists in the Genio Civile office, probably from among maintenance employees of the operating companies (but these would not be sufficiently numerous to do the entire job), and probably also by inquiries to the manufacturers of equipment listed in Appendix VI.

3. Transmission of Power. Conversion stations also will probably be destroyed. In order to help alleviate the complicated frequency situation arising from the destruction of these and the power plants, it is suggested that the interchange of energy between regions of different frequency be limited insofar as possible. This limitation will also cut down transmission losses, which are normally about 14 percent but would probably be much higher in the confused situation resulting from destruction of the power system.

4. Provision of Fuel for Thermal Plants. The survey of extent of damage will show the type of fuel burned in the thermal plants--whether domestic low-grade coal, or imported fuels which

would need to be supplied by shipment from Great Britain or the United States. Since Italian coal stocks are probably almost completely exhausted, and since electricity generation is likely to depend almost wholly upon coal-burning steam plants, an estimate of coal requirements should be prepared as early as possible, in order that any necessary shipping may be started. It should be kept in mind that any pre-Armistice figures on coal consumption by power plants will presumably be much lower than estimates of future needs, since these plants previously operated at such a small load factor.

5. Plant Management and Operation. It would be impossible to get satisfactory production without returning the actual operations in plants, in switching and transforming stations, and on transmission and distribution networks, to the private or municipal companies which have managed them in the past. Special precautionary measures will have to be taken, of necessity, to exclude persons hostile to the Allies, but this can, in all likelihood, be done on an individual basis. Certain of the most important plants may have to be guarded, and perhaps even managed, by Allied personnel, until the trustworthiness of the regular personnel has been established. It is germane to point out that the president of the Edison Company in 1938 was also a member of Parliament, an indication of his favor among high Fascist authorities. The electric companies are certain to have many Fascists among their personnel at all levels.

In order to prevent injustices on the part of any of the private companies, official orders issued both by the Italian Government and the Allied authorities should "freeze" the corporate relationships, thus preventing trading in stock, mergers, or other changes in the pattern of private ownership and operation, until the Allied electrical authority has been disbanded and full responsibility for the utility has been assumed by the Italian government.

D. Responsibilities of Italian Governmental Agencies. The extent to which the Allied agency will be obliged to assume administrative responsibility over rates, rationing, labor relations, and the other problems handled by Italian governmental agencies before the 1943 armistice, cannot be predicted at this time. It is suggested that each of these functions be left to the administration of the agency legally responsible for it, and that the Italian (liaison) staff assistant to the administrator of the Allied agency be made responsible for suggesting increases in the scope of the Allied agency if the Italian agencies seem unable to cope with the new complexities of their tasks. If a thoroughly competent and reliable Italian assistant cannot be secured for this position, it will be necessary to appoint Allied officials to the policy-making councils of the Italian agencies. Any further extension of the sphere of Allied supervision will be indicated by specific problems which must be solved as they arise by authorities on the spot.

It is very likely that the temporary Allied electricity agency will be able to disband before other, parallel Allied agencies do so. When the first crisis of reconstruction has been surmounted, and the available supplies of current are once more steadily increasing, the responsibilities of the agency contemplated in this Guide will have been discharged. A program of gradual relinquishment of full control over the electric utilities to the Italian government should be in preparation while the agency is still young.

VI. Sources of Further Information.

In addition to the files of governmental agencies and private and municipal companies, printed materials will be useful to Allied supervising agencies. These may be obtained in most important Italian libraries. The publications of the Ministry of Public Works, especially the Bollettino ufficiale, the Annali dei lavori pubblici, and all the publications of the Servizio Idrografico; the two leading technical journals, L'elettrotecnica and Energia Elettrica (the latter the house organ of UNFIEL and the Federazione nazionale fasciste esercenti imprese elettriche); and the publications of the Associazione elettrotecnica italiana will supply as much technical detail as is needed. Further information concerning laws and decrees may be found in the Gazzeta ufficiale and the Raccolta ufficiale delle leggi e decreti.

APPENDIX I. ALPS: STORAGE RESERVOIRS AS OF DEC. 31, 1937
(Accumulation larger than 5 mill. kwh. each)

Reservoir	Power Plant	Cap. (mill. cbm.)	Energy accumulated (mill. kwh.)
Lago Santa Croce	Fadalto	120.00	71.85
Caresor	Malga Maro	15.50	42.00
Lago delle Piazze	Pozzolago	6.08	7.35
Lago di Ledro	Riva	45.00	57.00
Lago d'Avio	Temu	20.80	50.57
Lago Salarno	Campellio	15.50	48.11
Lago Baitone	Campellio	15.76	48.93
Lago Arno	Isola	35.00	97.58
Lago d'Idro	Vobarno	75.00	15.72
Lago Fraele	Isolaccia	23.35	23.35
Venina	Zappello	9.85	29.50
Monte Spluga	S. Francesco	28.00	43.09
Lago Truzzo	S. Bernardo	15.60	55.64
Sardegnana, Colombo and smaller ones	Carona	15.00	34.50
Piano Barbellino	Dossi	16.20	31.74
Lago Nero and smaller ones	Aviasco	4.16	9.15
Lago Castel	Ponte	9.65	33.57
Val Toggia	Ponte	15.65	54.45
Vannino	Valdo	8.50	27.66
Busin	Valdo	4.70	15.29
Codelago	Goglio	16.50	42.89
Avino	Varzo	6.37	5.68
Cingino	Camplicciolí	5.00	19.84
Camposecco	Camplicciolí	5.72	23.66
Alpe Cavalli	Pirelli-Rovesca	8.66	21.65
Alpe Camplicciolí	Pirelli-Rovesca	8.94	19.68
Lago Antrona	Pirelli-Rovesca	5.62	9.36
Cignana	Maen	16.00	41.60
Lago Gabiet	Gressoney la Trinite	5.00	12.58
Ceresole Reale	Rosone	35.00	56.88
Lago della Rossa	Dietro la Torre	8.75	26.25
Lago Monconisio	Gran Scale	31.00	79.75
Laghi del Bionia	Le Nesce	8.41	16.82
		661.17	1,174.59
16 smaller ones		36.20	34.96
Total		697.37	1,209.55

APPENDIX II. NORTH ITALY: POWER PLANTS OF 5,000-KW. INSTALLED CAPACITY AND OVER

Name	Location	Type*	Installed Capacity (kw.)	Remarks
ACCIO-GOGLIO	On Devero River, Ticino Basin, 70 mi. NW of Milano.	H	32,000	Owned by Edison, Replaces older plant of same name, increasing its capacity from 20,000 to 32,000 kw. Storage reservoir has a cap. of 20 mill. cu.m. and will permit total annual production of 60 mill. kwh., available mostly in winter. Operations started 1938. Old plant had 5 sets, generating 3-phase, 42-cycle current.
AGORDO	On Cordevole River, Piave Basin, below Conconighe plant.	H	30,000	Owned by Adriatica; began construction 1940; probably now operating. Underground. Expected output 87 mill. kwh./yr.
AIROLE	80 miles S of Torino; Roya River and Basin.	H	11,000	Owned by Comp. imprese eletr. Ligure (Edison group). Built 1907. Altitude 101 m.; head 110.3 m.; average flow 4 cu.m/sec. 3 sets, generating 3-ph., 50 cycles at 2.7 kv.
ALPE VEGLIA	75 mi. NW of Milano.	H	?	A 1939 project on Cairasca River.

* H represents Hydroelectric; S represents steam.

Name	Location	Type	Installed Capacity (kw.)	Remarks
AOSTA	50 mi. NW of Torino.	S	12,000	Owned by Soc. an. naz. "Cogne"; built 1929. Four boilers, 575 sq.m. heating surface, burning blast furnace gas and pulverized coal, 30 atm., 370°C. Two steam turbo sets, generating 3-ph., 50 cycles at 5 kv.
ARCO-PRATI	On Vizzo River, Adige Basin, NE of Lake Garda and nr. Brenner Pass.	H	23,800	Owned by Soc. gen. elettr. Cisalpina (Edison group). Built 1928. Altitude 1,000 m.; head 359.58 m.; average flow 5.430 cu.m./sec. Reservoir capacity 0.45 mill. cu.m. 4 sets; two, of 7600 kw. each, generating 3-ph., 16.7 cycles at 6 kv.; one of 7600 kw. and one of 1,000 kw., generating 3-ph., 42/50 cycles at 6 kv. Main function is to supply Brenner railway, which took about 14,000 kw. in 1937-8. Also completes the ring Brossanone-Mezzocorona-Marlengo.
ARNISA	60 mi. NE of Milano, on Arnisa River, Adda Basin, near Sondrio	H	9,600	Owned by Acciaierie e ferriere Lombarde Falck; built 1929. Altitude 1040 m.; heads 232.35 and 303.10 m.; average flow 0.57 and 0.08 cu.m./sec. Water supply: from outlet of (continued)

Name	Location	Type	Installed Capacity (kw.)	Remarks
ARNISA (continued)				Vedello plant (see below) and 2 draw-offs on Arnisa River. Lower head feeds to Francis sets; higher head drives 2 Pelton turbines which may be attached at will to alternators of Francis sets. Plant generates 3-ph., 42- and 50-cycle current at 6.6 kv. Tailrace to Venina. Distribution through Venina.
AVIASCO	25 mi. NE of Bergamo, 50 mi. NE of Milano, on Serio River, Adda Basin.	H	6,100	Owned by Azienda elettr. Crespi e C.; built 1921. Altitude 985 m.; heads 1025.3 and 876 m.; average flow 0.109 and 0.125 cu.m./sec. 3 Riva sets generating 3-ph., 50-cycle current at 8 kv.
AYMAVILLES	50 mi. NW of Torino, on Dora Baltea River, Dora Baltea Basin.	H	8,000	Owned by Soc. an. nazionale "Cogne"; built 1918. Altitude 611 m.; head 50.55 m.; average flow 12 cu.m./sec. Four sets generating 3-ph., 50-cycle current at 5 kv. Water from Champagne tailrace (see below) by canal and tunnel through 3 penstocks.

Name	Location	Type	Installed Capacity (kw.)	Remarks
BARDONNECCHIA	50 mi. W of Torino, nr. Bardonnecchia railway station, on Bardonnecchia Torrent, Dora Riparia Basin.	H	22,000	Owned by State railways; built 1920/22. Heads 650, 250, and 45 m.; average flow 1.3, 1.9, and 0.35 cu.m./sec.; reservoir capacity (Rochemollos) 3.3 mill. cu.m. 8 generating sets and one house set. System: 3-ph., 16.7 cycles at 4 kv.; 3-ph., 50 cycles at 7 kv. Output: 60 mill. kwh. in 1937/8.
BATTIGIO	60 mi. NW of Milano, on Anza River, Ticino Basin.	H	17,280	Owned by Soc. gen. elettr. Alto Adige (Montecatini); built 1929. Altitude 560 m.; head 220.75 m.; average flow 5.181 cu.m./sec. 3 sets generating 3-ph., 42/50 cycles at 9 kv.
BERTINI-PADERNO D'ADDA	20 mi. NE of Milano, on Adda River, Adda Basin.	H	10,000	Owned by Edison; built 1898. Altitude 152 m.; head 29.01 m.; average flow 32.5 cu.m./sec. Water by canal and tunnel from reservoir on Adda River formed by dam at Paderno. Six sets, generating 3-ph., 42 cycles at 15 kv. One source reports 3 rotary converters also. Connections: two 60-kv. lines to Orobia; five 60-kv. lines to Esterle; one 15-kv. to Esterle.

Name	Location	Type	Installed Capacity (kw.)	Remarks
BEVERA	75 mi. SW of Genova; Roia River and Basin.	H	5,000	Owned by Comp. impreso elettr. Liguri (Edison); built 1911. Altitude 37 m.; head 52.9 m.; average flow 5.491 cu.m./sec. Two sets, generating 3-ph., 50 cycles at 6 kv.
BITTO (OROBIA)	50 mi. N of Milano, on Bitto River, S of Morbegno, Adda Basin.	H	?30,000	Four plants. Under construction in 1939 by Soc. Orobia (Edison); total output to be 130 mill. kwh./yr. Two in operation in 1942.
BOFFETTO	60 mi. NE of Milano, on Adda River, Adda Basin.	H	9,500	Owned by Acciaierie e ferriere Lombarde Falck; built 1919; feeds local metallurgical industry. Altitude 305 m.; head 44.5 m.; average flow 17.684 cu.m./sec. Three Riva Francis-type double turbines (one reserve), 507 rpm.; direct coupled to alternators, generating 3-ph., 42 cycles at 7.5 kv. Three transformers of 4500-kw., 7-7.5/68-73 kv.
BONATE DI SOTTO	25 mi. NE of Milano, on Brembo River, Adda Basin, about 7½ mi. W of Bergamo.	H	5,000	Owned by Soc. elettr. Bergamasca (Edison group); built 1931. Altitude 186 m.; head 25.6 m.; average flow 18 cu.m./sec. Three sets generating 3-ph., 50 cycles at 13.5 kv.

Name	Location	Type	Installed Capacity (kw.)	Remarks
BEVERA	75 mi. SW of Genova; Roia River and Basin.	H	5,000	Owned by Comp. imprese elettr. Liguri (Edison); built 1911. Altitude 37 m.; head 52.9 m.; average flow 5.491 cu.m./sec. Two sets, generating 3-ph., 50 cycles at 6 kv.
BITTO (OROBIA)	50 mi. N of Milano, on Bitto River, S of Morbegno, Adda Basin.	H	?30,000	Four plants. Under construction in 1939 by Soc. Orobia (Edison); total output to be 130 mill. kwh./yr. Two in operation in 1942.
BOFFETTO	60 mi. NE of Milano, on Adda River, Adda Basin.	H	9,500	Owned by Acciaierie e ferriere Lombarde Falck; built 1919; feeds local metallurgical industry. Altitude 305 m.; head 44.5 m.; average flow 17.684 cu.m./sec. Three Riva Francis-type double turbines (one reserve), 507 rpm.; direct coupled to alternators, generating 3-ph., 42 cycles at 7.5 kv. Three transformers of 4500-kw., 7-7.5/68-73 kv.
BONATE DI SOTTO	25 mi. NE of Milano, on Brembo River, Adda Basin, about 7½ mi. W of Bergamo.	H	5,000	Owned by Soc. elettr. Bergamasca (Edison group); built 1931. Altitude 106 m.; head 25.6 m.; average flow 18 cu.m./sec. Three sets generating 3-ph., 50 cycles at 13.5 kv.

Name	Location	Type	Installed Capacity (kw.)	Remarks
BORDOGNA	40 mi. NE of Milano, on Brembo River, Adda Basin, at Bordogna, about 19 mi. N of Bergamo.	H	31,800	Owned by Soc. Lombarda per distribuz. di energia elettrica (SIP group); built 1932. Altitude 528 m.; head 552.45 m.; average flow 3 cu.m./sec. Water from Brembo di Foppolo and Valsecca; also tailrace from Carona (see below). Two sets, generating 3-ph., 42 and 50 cycles at 8 kv. Distribution lines: one 130-kv. to Cislago.
BRESCIA	In Brescia, 50 mi. E of Milano.	S	15,000	Owned by Soc. Elettrica Bresciana (Edison group); built 1908. Boilers: six, manual feed, 419 sq. m. heating surface, coal and oil burning, 12 atm., 330° C; two, automatic feed, 760 sq. m. heating surface, 18 atm., 360° C. Four turbo sets, generating 3-ph., 42 cycles at 5.6 kv.
BRESSANONE	On Isarco River, Adige Basin, just above Brossanone.	H	140,000	Built by State railways and Montecatini; finished 1940. Drainage basin, 2620 sq. km.; head 162 m. Later: from reservoirs on Isarco (3.21 mill. cu.m. capacity) and Rienza (2.04 mill. cu.m. capacity). (continued)

Name	Location	Type	Installed Capacity (kw.)	Remarks
BRESSANONE (continued)				Dam on Isarco is 200 feet high, and possibly arched. Turbo-alternators: three vertical Francis-type, 20,000 kw. each, 315/375 rpm. (two by Marelli, one by Ansaldo); two of 15,000 kw., details not available. Underground plant, 340 ft. x 50 ft. x 80 ft.high. Supplies railways and Bolzano industrial area.
BROSSASCO	40 mi. SW of Torino, on Varaita River (Varaita Basin) below Casteldelfino.	H	36,000	Probably Edison's Val Varaita III. Head 1,000 ft. Two generating sets; output 90 mill. kwh./yr. May be in operation at present.
CADARESE-RIVASCO (Feltrinelli)	On right bank of Toce River, Ticino Basin, between affluences of Vova and Devero, N of Domodossola and NW of Lake Maggiore.	H	42,000	Owned by Edison; built 1926. Altitude 719 m.; head 467.65 m.; average flow 5.850 cu.m./sec. Water: from Toce and its system of reservoirs (Castel, Val Toggia, L. Busin, L. Vannino, Obersee) by canal to surge tank and two 5-ft. dia. penstocks to power plant. Two sets, generating 3-ph., 42 cycles at 0 kv. Local distribution: one 130-kv. line to Conti (Verampio).

Name	Location	Type	Installed Capacity (kw.)	Remarks
CALCINERE (PASSANA)	30 mi. SW of Torino, on Po River.	II	24,000	Owned by Soc. an. idroel. Monviso; built 1921. Altitude 701 m.; head 545.75 m.; average flow 1.966 cu.m./sec. Water: from Po near Crissolo, by canal and pipe line. Three Tosi Pelton sets, 500 rpm., generating 3-ph. 50 cycles at 6 kv. A connection at 60 or 130 kv. to Torino via Airasca substation.
CAMPELLIO (OGLIO)	70 mi. NE of Milano, at E end of Lake Arno, Oglio Basin.	II	8,600	Owned by Soc. gen. elettr. Cisalpina (Edison group); built 1921. Altitude 1819 m.; head 157.8 m.; average flow 1.99 cu.m./sec. Water: from a tunnel about 7½ mi. long, from L. Baitone through L. Selaria, with draw-offs en route. Five sets, generating 3-ph., 42 cycles at 4.3 kv. Distribution: 70-kv. line into Isola I. There was a project of the same name for 50,000 kw.; its progress is unknown.
CAMPLICCIOLI	65 mi. NW of Milano, on Ovesca River, Ticino Basin, above Pirelli plant (see below).	II	6,500	Owned by Soc. Edison; built 1930. Altitude 1360 m.; heads 883.35 and 968.37 m.; average flow 0.13 and 0.156 cu.m./sec. One set, generating 3-ph., 42/50 cycles at 8.5 kv. Two penstocks. Tailrace used by Pirelli.

Name	Location	Type	Installed Capacity (kw.)	Remarks
CAMPODOLCINO	65 mi. N of Milano, on Liro River	H	10,000	Head 450 feet. Planned to generate current for railways at 42 cycles. Still a project in 1939.
CANALE PIAVA	75 mi. NE of Venezia on Isonzo River, below Santa Lucia plant.	H	34,000	Adriatica began construction in 1940; plant probably now in operation. Estimated output 80 mill. kwh./yr. At least 2 Kaplan turbines, operating under a head of 84 ft.
CANEVA	About 40 mi. N of Venezia in Meschio Basin	H	34,500	Owned by Soc. Adriatica di elettricita; built 1927. Capacity may have been increased. Altitude 49 m.; head 105 m., average flow 25.5 cu.m./sec. Water: from Piave River through Laghetto di Negrisiola reservoir (0.5 mill. cu.m. capacity). Two penstocks, 8 ft. dia. Three turbo-alternators, 11,500 kw. each, 420 rpm., generating 3-ph., 42 cycles at 6 kv. One of group of six plants in Meschio Basin N of Venezia, mainly supplying NE Italy, totalling over 250,000 kw. Reported to supply railways. A 1940 report suggests reconstruction of plant in order to make it bomb-proof.
CAPORETTO	85 mi. NE of Venezia; Isonzo Basin.	H	20,000	Not operating in April 1942.

Name	Location	Type	Installed Capacity (kw.)	Remarks
CARDANO	On Isarco River, NE of Lake Garda, 4 km. east (upstream) of center of town of Bolzano	H	180,000	Owned by Soc. Idroel. dell'Isarco (SIP). Altitude 910 ft.; head 510 ft. Water supply: from the Isarco, dammed at Ponte all'Isarco, then through a 10-mile tunnel ending in penstocks varying between 6 and 9 ft. dia. Turboalternators: five 32,000-kw. Francis-type, 250/300 rpm., 10 kv., 42/50 cycles; three 8,000-kw., Pelton-type, 250 rpm., 4 kv., 16.7 cycles; two 400-kw., Pelton-type, 500 rpm., house sets, 500 volts, 50 cycles. Transformers: five of 36,000 kva., 10/240 kv., 3-ph., 42/50 cycles; three 8700 kva., 4/66 kv., 3 ph., 16.7 cycles; one ?kva., 10/21 kv., 3 ph., 42/50 cycles. Substations: two outdoor-type, with larger housing transformers for the 220-kv. transmission and the smaller for 60-kv., 16.7-cycles railway supply. Main connections: two 60-kv., 16.7-cycle lines for Brenner railway supply; one 20-kv. to Ponte Gardena (see below); one 220-kv. to Cislago and Turbigo; one 250-kv. outgoing line reported to Feltre (N of Venezia)--may be only projected or partly completed. Largest plant in Italy. About half of its 900 mill. kwh/yr. output went to railways before opening of Bressanone (see above); nearly all the rest send to Milano industrial area.

Name	Location	Type	Installed Capacity (kw.)	Remarks
CARONA	50 mi. NE of Milano, on Brembo River, Adda Basin.	H	21,300	Owned by Soc. Lombarda per distribuz. di energia elettrica (SIP); built 1924. Altitude 1126 m.; head 600 m. and 157 m.; average flow 1 cu.m./sec. and 0.145 cu.m./sec. Water supply: from Brembo River, L. Marcio, Sardegnana, L. Colombo, L. Gemelli, Diavolo. Dam: gravity-type, stone and cement, 200 m. long, 35 m. high, width varies from 25 m. at base to 3.5 m. at top. Spillway is 24 m. long. One penstock branching into three as it nears the plant. Station: 2 buildings (machine room and transformer station). Two generating sets and one house set, all producing 3-ph., 50 cycles at 7.5 kv. Transformers: two of 15,000 kva., 7.5/135 kv.
CAROSO	25 mi. E of Genova, on Penna and Sturla Rivers, Entella Basin	H	6,600	Owned by Soc. forze idraul. della Liguria (Edison); built 1925. Altitude 564 m.; head 397 m.; average flow 0.8 cu.m./sec. Two generating sets, producing 3-ph., 50-cycle current at 6 kv.
CASSANO D'ADDA	15 miles E of Milano; Adda River and Basin.	H	9,400	Owned by Linificio e Canapificio Nazionale; built 1928. Altitude 123 m.; heads 8 and 6 m.; average flow 80 and 15 cu.m/sec. Eight sets, generating 3-ph., 42/50-cycle current at 8 kv.
CASTEL-BELLO	100 mi. NW of Venezia; Adige Basin.		72,000	Projected in 1938. Head 900 ft.

Name	Location	Type	Installed Capacity (kw.)	Remarks
CASTELDELFINO (GUNEO)	In Val Varaita at Casteldelfino, 45 mi. SW of Torino.	H	28-30,000	Designed for 55 mill. kwh./yr. Edison reported in March 1939 that "Val Varaita I and II" were under construction; this is the former. Expected to be in at least partial operation by 1940. Farthest upstream of 3 plants in cascade (see also Brossasco and Sampeyre). Altitude 3,800 ft.; head 1,000 ft. Water supply: from Castello reservoir at 4,750 ft. on Varaita de Chianale River. Dam: arched masonry, 300 yds. long, 220 ft. high. Tunnel and pipes to plant. Turboalternators: two 14,000-kw. vertical-Francis sets by Ansaldo, 630/750 rpm. Transformers: two 17,500-kva.; 42/50 cycles, 10/138 kv. (possibly also 80 kv.), forced oil circulation, water cooled, by Ansaldo, in open-air substation. Main connection: one 130-kv. line to Cairo Montenotti substation to link up with C.I.E.L.I. network.
CASTELLANZA	At Castellanza, 15 mi. NW of Milano, on left bank of Olona River.	S	22,000	Owned by Soc. Lombarda per distribuz. di energia elettrica (SIP); built 1904. Condensation water from Olona River. 14 boilers (oil burning); 5 steam turbines and generators; one Diesel set; 3 synchronous condensers, 5,000 kva. each, one synchronous condenser, 10,000 kva. Four transformers, 16,600 kva., 43/11 kv. Generates 3-ph., 50-cycle current at 11 kv. Principal function is to make up the winter deficiency of Valtellino plants tied into Cislago.

Name	Location	Type	Installed Capacity (kw.)	Remarks
CASTELLETO (PIAVE)	35 mi. N of Venezia, near Caneva, Piave River and Basin.	H	6,000	Owned by Soc. Adriatica di elettricita; built 1923. Altitude 92 m. head 62.5 m. average flow 6 cu. m/sec/ Two sets, generating 3-ph., 42-cycle current at 5 kv. May supply railways.
CASTELVIELNO (NERVESA)	25 miles N of Venezia; Piave River and Basin.	H	9,800	Built 1931; owned by Cons. Brentella di Pederobba, Cons. della Vittoria e Piavesella di Nervesa. Altitude 84 m. head 46 m. average flow 14 cu.m/sec. Two sets, generating 3-ph. 42/50 cycles at 8 kv.
CEDEGOLO (BRESCIANA)	70 miles NE of Milano; Oglio River and basin, near the Cedegolo (Cisalpina) plant.	H	8,300	Owned by Soc. elettr. Bresciana (Edison); built 1908. Altitude 402 m. head 97.12 m. average flow 8 cu.m/sec. Utilizes water from Oglio; intake works located at Malonno. Four sets, generating 3-ph., 42 cycles at 3.6 kv.
CEDEGOLO (CISALPINA)	On left bank of Oglio River, below Campellio and Isola power plants, NW of Lake Garda in the Val Camponica.	H	34,000	Owned by Soc gen. elettr. Cisalpina (Edison); built 1910. Altitude 400 m. head 478.3 m.m. Water supply: from L. Arno, and tailrace from Isola, by canal, surge tank, and penstocks. Seven sets (some by Riva). (continued)

Name	Location	Type	Installed Capacity (kw.)	Remarks
CIDEGGIO (CISALPINA) (continued)				generating 3-ph., 42 cycles at ?11 kv. Plant is an important junction point: its open-air substation is link between power plants of Upper Oglio and distribution to Milano and Bologna areas. Reported to supply railways. [illegible] increased output.
CENISCHIA	On Cenischia River, Dora Riparia Basin.	H	6,500	Owned by SIP; began operations in 1938. Annual output 40 mill. kwh.
CHATPAGNE	50 mi. NW of Torino, on Dora di Rhemes River, Dora Baltea Basin.	H	13,000	Owned by Soc. an. naz. "Cogne"; built 1921. Altitude 675 m. head 430 m. average flow 3.2 cu.m/sec. Three sets, generating 3-ph., 50 cycles at 5 kv. Supplies railways (one mill. kwh. in 1937/38).
CHAVONNE	50 mi. NW of Torino, Dora Baltea River and Basin.	H	14,500	Owned by Soc. an. naz. "Cogne"; built 1918. Altitude 672 m. head 551.63 m. average flow 1.87 cu.m/sec. Three sets and one house set generating 3-ph., 50 cycles at 5 kv. Supplies railways.

Name	Location	Type	Installed Capacity (kw.)	Remarks
CHIAPELLA	At Genova	S	5,000	Belongs to state railways; built 1911. Not in 1937 official list. Boilers: 14, 374 sq. m. heating surface, manual feed, coal burning, 16 atm., 330° C. Two steam turbo sets, generating 3-ph., 16.7 cycles at 4 kv.
CHIEVO (BUSSOLENGO)	70 mi. N of Bologna, on Adige River 3 mi. NW of Verona	H	80,000	Edison and Adriatica began construction of these 2 plants in 1939, with completion expected for 1943 if cement supply did not fail. Estimated output 400 mill. kwh./yr.
CHIOMONTE	35 mi. W of Torino, on Dora Riparia River.	H	16,000	Owned by Az. Elettr. Municipale di Torino; built 1910. Altitude 651 m. head 325.58 m. average flow 5 cu.m/sec. Five sets generating 3-ph., 50 cycles at 8 kv. Supplies Turin; some power to railways.
CIMENA	15 mi. NE of Torino, on To River.	H	20,000	Reported under construction by SIP in 1941; due for completion in 1943. Estimated output 130 mill. kwh./yr.

Name	Location	Type	Installed Capacity (kw.)	Remarks
CODELAGO	75 mi. NW of Milano, on Devero River.	H	?	Planned to produce 18 mill. kwh/yr. Still under construction in 1941.
COGOLO	On Rose Bianco River, Adige Basin, N of Lake Garda, about 25 mi. NW of Trento.	H	34,000	Owned by Soc. gen. elettr. Cisalpina (Edison); built 1929. Capacity reported increased (may have reference to Cogalo-Monclassico below). Altitude 1,200 m. head 762.3 m. average flow 2.090 cu.m/sec. Water supply: from tailrace of Malga Mare (see below). Two sets and one house set, generating 3-ph., 42/50 cycles at 9.3 kv. One of a group of plants NE of L. Garda whose output passes through San Michele and feeds the Bologna area through the key substation of San Polo d'Enza. Reported to supply railways also.
COGOLO-MONCLASSICO (NEAR COGOLO), SAN GIACOMO, SANTA GIUSTINA	On Rose River, near Cogolo.	H	?	Under construction by Edison and Cisalpina in June 1942, but work proceeding slowly, with no date of completion fixed. Total output 600 mill. kwh/yr.
COLCIBO (PALLANZENO)	On right bank of Toce River, Ticino Basin, below affluence of R. Ovesca, just S of Domodossola, NW of Lake Maggiore.	H	30,000	Owned by Soc. Edison; built 1926. Altitude 238 m. head 540.05 m. average flow 3.2 cu.m/sec. Water supply: from Ovesca River and 2 tributaries, through a canal whose intake is near outlet from Pirelli (see (continued)

Name	Location	Type	Installed Capacity (kw.)	Remarks
COLOMBO (PALIANZEC) (continued)				below), to surge tank and penstocks. Cvesca River has been dammed at various points to form storage reservoirs. Four sets (three by Riva), generating 3-ph. 42/50 cycles at 6.6 kv. Supplies Milano area and railways.
CONCENTRIA (GENOVA)	In Genova harbor.	S	53,000	Owned by Cisalpina (Edison); built in present form in 1929. Reported planned for 100,000 kw. Four boilers, 2050 sq. m. heating surface, automatic feeding, coal burning, 29 atm., 420° C. Two Turboalternators, 25,000 kw. each, 2420/3000 rpm. Two transformers, installed 1927, 32,500 kva, 6.5/60, 130 kv. supplied by CGE. Transmission: 130-kv. lines to Arquata Scrivia. One of largest steam plants in Italy. Supplements northern hydro plants in supplying industrial areas of Lombardia and Liguria; also supplies railways.

Name	Location	Type	Installed Capacity (kw.)	Remarks
CONTI (VERATTIC)	On right bank of Toce River, Ticino Basin, below Crego, 70 mi. NW of Milano.	H	21,000	Owned by Soc. Edison; built 1915. Altitude 521 m.; head 572.53 m; average flow 1.94 cu.m./sec. Utilizes L. Codelago as reservoir, w. capacity of 16.5 mill. cu.m. Four sets, generating 3-ph. 42 cycles at 8 kv. As of 1938, additional power to be obtained from increased flow of water through alterations to Agaro-Goglio plant (see above).
CONFINE	70 mi. S. of Torino; Roya River and Basin	H	11,000	Owned by Comp. imprese elettr. Liguri (Edison); built 1916. Altitude 530 m.; head 115.5 m.; average flow 3.45 cu.m./sec. Water from San Dalmazzo tailrace (see below). Three sets, generating 3-ph., 50 cycles at 5250 volts.
COLLINO-PLINIO	45 mi. N of Milano; Varrone River, Adda Basin.	H	12,000	Owned by Soc. An. Orobia (Edison); built 1924. Altitude 203 m.; head 473.95 m.; average flow 1.3 cu.m./sec. Two sets, generating 3-ph., 42 cycles at 5 kv.

Name	Location	Type	Installed Capacity (kw.)	Remarks
CORNA (DARFO)	55 mi. NE of Milano; Oglio River and Basin.	H	8,100	Owned by "Ilva" (iron and steel); built 1907; supplies Darfo plant. Altitude 231 m.; head 127.21 m.; average flow 5 cu.m./sec. Five sets, generating 2-ph., 36 cycles and 3-ph., 42 cycles at 8 kw.; 550 volts DC.
COVALCU	50 mi. N of Torino; on Marmore River, Dora Baltea Basin.	H	30,000	Owned by Soc. idroel. Marmore (SIP); built 1926. Projected increase to 65,400 kw., to permit an additional output of 110 mill. kwh.; no information as to whether done. Altitude 750m.; head 559.7 m.; average flow 3.81 cu.m./sec. Two sets, generating 3-ph., 42 and 50 cycles at 6.3 and 6.9kv.
CREGO	65 mi. NW of Milano, on left bank of Toce River, Ticino Basin, below affluence of Devero River.	H	16,000	Owned by Soc. Edison; built 1919. Altitude 522 m.; head 189.91 m.; average flow 6.8 cu.m./sec. Three sets, generating 3-ph., 42 cycles at 8 kv.
CREVA DI LUINO	40 mi. NW of Milano, on Tresa River, Ticino Basin.	H	12,000	Owned by Soc. Idroel. del Tresa (Edison); built 1929. Altitude 209 m.; head 27.5 m.; average flow 20 cu.m/sec. Two sets, generating 3-ph., 50 cycles at 7 kv.

Name	Location	Type	Installed Capacity (kw.)	Remarks
CHEVOLA	On right bank of Toce River, Ticino Basin, above the affluence of Diveria River, just N. of Domodossola, NW of Lake Maggiore.	H	35,000	Owned by Soc. Edison; built 1925. Altitude 303 m.; head 284.3 m.; average flow 10 cu.m/sec. Water supply; from Toce River through a a tunnel whose intake is just S of junctionw. Devero River, and tailraces from Crego and Conti. From surge tank two 5-ft. dia. penstocks drop to plant. Two sets by Riva, generating 3-ph., 42 and 50 cycles at 6 kv. One of the important group of plants in Domodossola area supplying Milano.
CROTTI (USSEGLIO)	25 m. W. of Torino, on Stura di Viu River, Stura Basin.	H	16,000	Owned by "Ovesticino" soc. an. distrib. energia elettrica (Edison); built 1932. Altitude 1309 m.; head 511.5 m.; average flow 1.59 cu.m./sec. Two sets, generating 3-ph., 42 and 50 cycles at 10 kv.
DOBLARI	30 mi. NE of Venezia; Isonzo Basin.	H	30,000	Underground plant. Not finished by April 1942.
DOMODOSSOLA	60 mi. NW of Milano, on Toce River, Ticino Basin.	H	30,000	Began operations in 1941. Output 110 mill. kwh./yr. A smaller plant for re-utilization of overflow of Domodossola reservoir was under construction in 1941.

Name	Location	Type	Installed Capacity (kw.)	Remarks
DOSSI	About 20 m. W. of Cedegolo on Serio River, Adda Basin, SW of Tirano in area E. of Lake Como.	H	30,000	Owned by Soc. forze idraul. di Trezzo d'Adda (Edison); built 1925. Altitude 847 m.; head 956.4 m.; average flow 1.3 cu.m./sec. Water supply; from reservoirs nr. Val Morte and Piano Barbellino by a system of canals and tunnels. Plant stands in its own compensating reservoir nearly surrounded by water. Power house well built and large enough to accommodate 3 more machine units. Five sets, horizontal-shaft, Pelton-type by Tosi, generating 3-ph., 42/50 cycles at 8.5 kv. Switching and transformer equipment, ad jacent to machine room: three transformers, 6,200 kva. each, 8.5/70 kv.; one transformer, 10,000 kva; 8.5/70 kv. Annual capacity estimated at 80 mill. kwh.
DRO (TRENTO) (UMBERTO DI SAVOIA)	30 mi. NW of Venezia on Sarca River, Mincio Basin.	H	17,000	Owned by Soc. an. industriale Trentina; built 1923. Supplies city of Trento and surrounding areas, with Fies plant (see below). Altitude 131 m.; head 51.4 m.; average flow 25.2 cu.m./sec. Water supply: from Fies tailrace, and from Sarca River. Diversion Dam across Sarca at Fies; from here a

Name	Location	Type	Installed Capacity (kw.)		Remarks
DRO (TRENTO) (UMBERTO DI SAVOIA) (continued)				(cont.)	canal and tunnels, 400 ft. long take wate to a forebay of 280,000 cu. ft. capacity. Two 900 ft. long penstocks, 7 ft. 6 in. dia., lead to a 3-story masonry power house built on massive reinforced concret foundations. Equipment: 3 Dupreto Escher Wyss Francis-type turbines, 6500 hp. each, driving 3 Siemens Schuckert, 6000-kva., 5000-volt AC generators; one Dupret Escher Wyss Francis-type turbine, 6500 hp. driving one BBC 6000-kva., 5000-volt generator. Current stepped up to 70 kv. by four Siemens Schuckert transformers, each of 6500 kva. capacity, and fed into the transmission line connecting to Fies (see below) and the main substation in Trento. One line connects with a substation of the Societa Elettrica Trentina, at 20 kv.
DRONERO	80 mi. W of Genova; Maira River and Basin.	H	9,800		Owned by Comp. impr. elettr. Liguri (Edison); built 1927. Altitude 614 m.; heads 82.5 and 71.7 m ; average flow 3.93 and 2.5 cu.m./sec. Three sets, generating 3-ph., 50 cycles at 6 kv.
ESINE-CIVIDATE	On Oglio River, 60 mi. NE of Milano.	H	40,000?		Owned by Soc. Edison; completed in July 1942. Head 420 ft. Output estimated at 150 mill. kwh/yr.

Name	Location	Type	Installed Capacity (kw.)	Remarks
ESTERLE-ROBBIATE	On Adda River, Adda Basin, S of Lake Como and NE of Milano.	H	36,800	Owned by Soc. Edison; built 1914. Altitude 150 m.; head 38.81 m.; average flow 72 cu. m./sec. Water supply: a combined canal and tunnel about 3 mi. long leads from Adda River to the six penstocks, each 3 ft. dia. Generating sets: six 4600-kw. Riva/AEG turbo-alternators, 315 rpm, supplied 1914, generating 3-ph., 42 cycles at 15 kv.; two 4600-kw. sets, generating 3-ph., 16.7 cycles at 2 kv. Low-head plant whose output goes mainly to Milano industrial district, with balance for railway supply.
FADALTO	About 40 mi. N of Venezia in Meschio Basin.	H	86,000	Owned by Soc. Adriatica di elettricita; built 1914 and 1923. Apparently two plants, one of 77,000 kw. and one of 9,000 kw. Water supply: from Piave River through a system of reservoirs and canals. Immediate source: L. Santa Croce. Altitude 278 m.; head 106 m.; average flow 33 cu.m/sec. Eight sets, producing 3-ph., 42 cycles at 6 kv. Largest of hydro plants supplying Venezia and Trieste districts; one of the group of 6 plants totalling over 250,000 kw. One report says bomb-proof reconstruction. Supplies some power to railways.

Name	Location	Type	Installed Capacity (kw.)	Remarks
FARNETA	On Secchia River between Genova and Bologna.	H	33,600	Owned by Soc. Emiliana esercizi elettrici (Edison); built 1928. Altitude 418 m.; head 327 m.; average flow 3.6 cu.m./sec. Reservoir capacity 2.7 mill. cu.m. Four sets, generating 3-ph., 42 and 50 cycles at 6.8 kv.
FIES (TRENTO)	80 mi. N.W of Venezia on Sarca River, Mincio Basin.	H	21,000	Owned by Soc. Ind. industriale Trentina; built 1908/1930. Altitude 185 m.; head 55.9 m.; average flow 24.57 cu.m/sec. Water supply: diversion dam across Sarca River at Pietramurata; a 4100-ft. canal leading into L. Cavadine (53 mill. cu.ft. storage space during low water); headworks at L. Cavadine; a 3450 ft. canal to a forebay of 320,000 cu.ft. capacity; 6 steel penstocks, each 380 ft. long, 4 ft. 6 in. dia. Plant: masonry on a masonry foundation. Machine equipment: eight sets, generating 3-ph., 42/50 cycles at 5.5 kv. Six Siemens Schuckert transformers, 2500-kva. each, 5.5/70 kv. With Dro, supplies city of Trento and surrounding areas.

Name	Location	Type	Installed Capacity (kw.)	Remarks
FIUME	At Fiume, 100 mi. E of Venezia.	S	6,500	Owned by the city; built 1908. Boilers: 6, automatic feed, coal burning, 300 sq. m. heating surface each, 11 atm. 300° C. Three turbo sets, generating 3-ph., 42 cycles at 5 kv. Cross-frontier connection with Susak.
FONDOVALLE	On Toce River, Ticino Basin, 70 mi. NW of Milano.	H	76,000	Edison; under construction in 1939. Altitude 1300 m. To produce 23 mill. kwh., chiefly in winter.
FORNO ALLIONE	On left bank of Oglio River, Oglio Basin, 70 mi. NE of Milano.	H	7,400	Owned by Soc. gen. elettr. Cisalpina (Edison); built 1920. Altitude 464 m.; head 335.12 m.; average flow 1.391 cu.m. sec. Utilizes water from Allione River. Three sets, generating 3-ph., 42 cycles at 12 kv.
FOSSA BIUBA (TREVISO)	On Livenza River, Meschio Basin, 25 mi. NE of Venezia.	H	5,800	Owned by Adriatica; built 1930. Altitude 21 m.; head 24.5 m.; average flow 9 cu.m./sec. Two sets, generating 3-ph., 42 cycles at 6 kv.
FUCINE	On Stura di Viu River, Stura Basin, 20 mi. NW of Torino.	H	8,000	Owned by "Ovesticino" soc. an. distrib. energia elettrica (Edison); built after 1932. Head 172.2 m.; average flow 3.85 cu.m./sec. One set, generating 3-ph., 42/50 cycles at unknown voltage.
FUNGHERA	15 mi. NW of Torino, on Stura di Lanzo River, Stura Basin.	H	8,300	Owned by Soc. an. elettricita Alta Italia (SIP). Heads 155.18 m. and 63.70 m.; average flow 2.362 and 4.350 cu.m./sec. Four sets, generating 3-ph., 50-cycle current at unknown voltage.

Name	Location	Type	Installed Capacity (kw.)	Remarks
GAIERA (LEMIE)	20 mi. NW of Torino, on Stura di Viu River, Stura Basin.	H	18,000	Owned by "Ovesticino" soc. an. distrib. energia elettrica (Edison); built 1929. Altitude 893 m.; heads 348.9 and 348.3 m.; average flow 2.845 and 0.062 cu.m./sec. Three sets, generating 3-ph., 42/50 cycles at 10 kv.
GIAIS (UDINE)	45 mi. NE of Venezia; Cellina River, Livenza Basin	H	7,600	Owned by soc. Ital. per l'util. delle forze idraul. del Veneto (Adriatica); built 1908. Altitude 229 m.; head 60 m.; average flow 12 cu.m./sec. Two sets, generating 3-ph., 42 cycles at 4 kv.
GLORENZA (REGIA LAKES)	105 mi. NE of Milano, on Upper Adige River.	H	93,000	Owned by Montecatini; construction begun in 1940, with completion scheduled for 1943, although full output will probably not be available before 1944. Expected to produce 600 mill. kwh./yr of regulated energy to be used in Bolzano industrial area and in the Italian network in general. An interconnection with the German power system was reported.
GOGLIO				See above under Agaro-Goglio.
GRADISCA	70 mi. NE of Venezia; Isonzo Basin	H	16,000	Not operating by April 1942.
GRAN SCALA	40 mi. W of Torino, near Venaus; Cenischia River, Dora Riparia Basin	H	7,000	Owned by Forze idraul. del Moncenisio (SIP); built 1922. Altitude 1726 m.; head 189.05 m.; average flow 1.8 cu.m./sec. Reservoir L. Moncenisio with a capacity of 31.9 mill. cu.m. Four sets, generating 3-ph., 50 cycles at 3 kv.

Name	Location	Type	Installed Capacity (kw.)	Remarks
GRESSONEY LA TRINITE	50 mi. N of Torino, on Mos and Gabiet Rivers, Dora Baltea Basin.	H	15,000	Owned by Soc. idroel. Piemontese-Lombarda E. Breda (SIP); built 1918. Altitude 1639 m.; head 717.3 m.; average flow 0.5 cu.m./sec. Reservoir L. Gabiet, with capacity of 4.43 mill. cu.m. Two sets, generating 3-ph., 42/50 cycles at 6 kv. Supplies Torino.
GROSOTTO	80 mi. NE of Milano, at headwaters of Adda River, Adda Basin.	H	30,000	Owned by Az. elettr. municipale di Milano; built 1910. Altitude 600 m.; head 327.5 m.; average flow 6.204 cu.m./sec. Three sets, generating 3-ph., 42 cycles at 10 kv.
HONE (BARD)	35 mi. N of Torino, on Ayasse River, Dora Baltea Basin.	H	11,000	Owned by Soc. dell' alluminio Italiano; built 1919. Altitude 364 m.; head 745.26 m.; average flow 0.079 cu.m./sec. and 1.336 cu.m./sec. Three sets, generating 3-ph., 50 cycles at 11.5 kv.
ISELLE	70 mi. NW of Milano, on Diveria River, Ticino Basin.	H	6,600	Owned by "Dinamo" soc. Ital. imprese elettriche (Edison); built 1922. Altitude 618 m.; head 171.75 m.; average flow 3.36 cu.m./sec. Three sets, generating 3-ph., 42 cycles at 3.3 kv. Reported to feed railways.

Name	Location	Type	Installed Capacity (kw.)	Remarks
ISOLA I	On right bank of Poia River (tributary of Oglio River), Oglio Basin, NW of Lake Garda.	H	47,000	Owned by Soc. gen. elettr. Cisalpina (Edison); built 1910. Altitude 886 m.; head 915.8 m. Eight sets, Pelton-type turbines, by Escher Wyss and Tosi, generating 3-ph., 42-cycle current at 10, 11, 12, and 13 kv. One of the important group of plants in the Oglio Basin whose output to Milano and Italy is controlled mainly through the key substation at Gorlago. Scheduled additional water supply may have increased output.
ISOLA DI PALANZANO	60 mi. N of Livorno, on Cedra di Valditacca, Enza Basin.	H	8,600	Owned by Comp. imprese elettr. Liguri; built 1908. Altitude 578 m.; head 354.13 m.; average flow 0.5 cu.m./sec. Five sets, generating 3-ph. 42 cycles at 3.6 kv.
ISOLACCIA	90 mi. NE of Milano, on Biola River, Adda Basin.	H	38,000	Owned by Az. elettr. municipale di Milano; built 1928. Altitude 1335 m.; head 503 m.; average flow 1.19 cu.m./sec. Reservoir Cancano Fraele with capacity of 22 mill. cu.m. Three sets, generating 3-ph., 42 cycles at 7.6 kv.
ISOLLAZ	50 mi. N of Torino, on Evancon River, Dora Baltea Basin.	H	33,000	Owned by Soc. idroel. dell' Evancon (SIP); built 1928. Reported expansion, completed in 1938, to 53,000 kw. Head 601.37 m.; average flow 4.4 cu.m./sec. Two sets, generating 3-ph., 50 cycles at 3 kv.
ISORNO	60 mi. NW of Milano, on left bank of Isorno River, Ticino Basin, above Pontetto power plant.	H	13,000	Owned by "Isorno" soc. an. costruzione esercizio impianti elettrici. Head 479.04 m.; average flow 1.326 cu.m./sec. Four sets, generating 3-ph., 42-cycle (cont.)

Name	Location	Type	Installed Capacity (kw.)	Remarks
ISORNO (cont.)				current at unknown voltage. As of 1938, a reservoir was under construction in vicinity of Larecchio, to have a capacity of 2.7 million cu.m., and to furnish an additional 400 hp. to the plant.
ISOVERDE (CAMPOMORONE)	8 mi. N of Genova, on Gorzente River, Po Basin.	H	7,900	Owned by Soc. an. acquedotto de Ferrari-Galliera; built 1901. Altitude 270 m.; head 360 m.; average flow 0.6 cu.m./sec. Three sets, generating 3-ph., 50 cycles at 5 kv.
LEGNANO	10 mi. NW of Milano.	S	8,750	No further information.
LE PIANE	20 mi. SW of Bologna, on Brasimone River, Reno Basin.	H	10,000	Owned by Soc. idroel. del Brasimone - Soc. Bolognese di elettricita (Adriatica); built 1925. Altitude 325 m.; head 171.5 m.; average flow 10.3 cu.m./sec. Two sets, generating 3-ph., 42 cycles at 5 kv.
LIGONCHIO II	50 mi. W of Bologna, on Ozola River, Secchia Basin.	H	14,000	Owned by Soc. gen. elettr. Cisalpina (Edison); built 1922/27. Altitude 932 m.; head 276.4 m.; average flow 1.082 cu.m./sec. Two sets, one generating 3-ph., 16.7 cycles, the other 3-ph., 42/50 cycles, both probably at 7 kv. One source reports frequency changers with standby water drive.
LUDRIGNO I AND II	50 mi. NE of Milano, on Serio River, Adda Basin.	H	12,000	Owned by Soc. impianti idroel. Alto Serio; built 1922 and 1924. Heads 86.3 and 272.73 m.; average flow 4.75 and 0.91 cu.m./sec. Five sets, generating 3-ph., 50-cycle current at unknown voltage.

Name	Location	Type	Installed Capacity (kw.)	Remarks
MAEN	60 mi. N of Torino, on Marmore River, Dora Baltea Basin.	H	43,000	Owned by Soc. idroel. Marmore (SIP); built 1927. Altitude 1341 m.; heads 483.45 and 811.95 m.; average flow 1.803 and 0.335 cu.m./sec. Three sets, generating 3-ph., 50 cycles at 6.3 and 6.9 kv.
MALGA MARE (TRENTO)	100 mi. NE of Milano, on Noce Bianco River, Adige Basin.	H	12,000	Owned by Soc. gen. elettr. Cisalpina (Edison); built 1932. Altitude 1965 m.; head 621.47 m.; average flow 0.469 cu.m./sec. One set, generating 3-ph., 42/50 cycles at 10 kv. Automatic station controlled from Cogolo (see above).
MALLERO (SUPERIORE)	60 mi. NE of Milano, on Mallero River, Adda Basin.	H	24,000	Owned by Soc. Lombarda per distribuz. energia elettrica (SIP; built 1911). Altitude 454 m.; head 495 m.; average flow 2.846 cu.m./sec. Plant is a single building divided into two parts: (a) machine room, and (b) transformer and switchgear house. Five sets, generating 3-ph., 50 cycles at 8250 volts. Transformers: two of 15,000 kva., 8/135 kv.; four of 5,000 kva., 8/50 kv.
MALNISIO (UDINE)	45 mi. NE of Venezia, on Celline River, Livenza Basin.	H	7,800	Owned by Soc. Ital. per l'util. delle forze idraul. del Veneto (Adriatica); built 1905. Altitude 285 m.; head 60 m.; average flow 12 cu.m./sec. Four sets, generating 3-ph., 42 cycles at 4 kv.

Name	Location	Type	Installed Capacity (kw.)	Remarks
MARCO (MORI)	90 mi. N of Bologna, on right bank of Adige River (Adige Basin), above the Marco railway station.	H	17,200	Owned by Soc. Italiana dell' Alluminio (Montecatini); built 1928. Altitude 163 m.; head 10.6 m.; average flow 160 cu.m./sec. Dam: above the Navazzone bridge. Intake works, somewhat above dam on right-hand bank, comprise 13 intake mouths covering a total distance of 97 m. Canal, 2397 m. long, leads to plant, which is constructed directly against wall of surge basin, and is 61 m. x 19.5 m. in size. Machine equipment: 3 Francis-Charmilles-type turbines by Tosi, 30 cu.m./sec.; one Kaplan-Storck-type by Riva, 65 and 25 cu.m./sec.; four generators by BBC. All current is DC at 350 volts. Supplies local aluminum works.
MARLENGO	110 mi. NW of Venezia, on right bank of Adige River, just above Mara Bassa railway station.	H	35,500	Owned by Montecatini; built 1925. Altitude 297 m.; head 129.37 m.; average flow 23.88 cu.m./sec. Water from spillway of Tel (see below). First section of canal (223 m.) is open and largely a bridge canal; thereafter it passes through a tunnel (3470 m.) which ends in surge basin. Penstock, upper part of which is built of reinforced concrete and is underground, has a dia. of 3.6 m.; lower part, which is above ground and passes under the Merano-Malles railway bridge, has a dia. of 3.5-3 m. Seventeen generating sets: one of 7250 kw, producing 3-ph., 42/50 cycles at 10.5 kv.; sixteen, of 1750 kw. each, producing DC at 500 volts. Output used in Montecatini nitrate plant at Merano.

Name	Location	Type	Installed Capacity (kw.)	Remarks
MARTINETTO	At Torino, in NW suburbs.	S	18,000	Owned by Az. elettrica municipale di Torino; built 1907. Eleven coal-burning boilers; five steam turbo sets, generating 3-ph., 50 cycles at 3150 and 6600 volts. Supplies Torino.
MASINO	50 mi. NE of Milano, on Masino River, Adda Basin.	H	10,000	Owned by Soc. Lombarda per distribuz. energia elettrica (SIP); built 1909. Altitude 308 m.; head 427.8 m.; average flow 1.544 cu.m./sec. Intake and head works: small dam and settling basin with capacity of 400 cu.m. Canal partly open and partly in tunnel runs along left bank of Masino River for 3800 m., ending in a surge basin, with capacity of 15,000 cu.m. Two penstocks, each 920 m. long, with dia. varying from 1000/850 mm. feed plant. A spillway with dia. of 1000/500 mm. lies to right of penstocks. Plant consists of two separate contiguous buildings--machine house and transformer house. Four sets, generating 3-ph., 50 cycles at 8 kv. Transformers: one of 4500 kva.; three of 2750 kva.
MAZZUNNO	55 mi. NE of Milano, on Dezzo River, Oglio Basin.	H	6,975	Owned by Cons. idroel. del Dezzo. Head 220.9 m.; average flow 2.055 cu.m./sec. Four sets, generating 3-ph., 50-cycle current at unknown voltage.
MAZZUNNO	55 mi. NE of Milano, on Dezzo River, Oglio Basin.	H	8,595	Owned by Soc. elettr. Bresciana (Edison) and "Ilva". Head 132.73 m.; average flow 5 cu.m./sec. Generating sets: three, 1190 kw. each, producing 2-ph., 36-cycle current at unknown voltage; one of 2550 kw. and one of 2475 kw., producing 3-ph., 42-cycle current at unknown voltage.

Name	Location	Type	Installed Capacity (kw.)	Remarks
MESTRE (PORTO MARGHERA)	At Marghera near Venezia, on the industrial western canal.	S	57,000	Owned by Idroel. Veneta (Adriatica); built 1928. Fuel: Cardiff coal. Boilers: four semi-marine type, 400 lbs./sq. in.; two oil burning; to have 12 eventually, in two boiler houses. Turbo-alternators: two 16,000-kw., Tosi-Ganz sets, 2520 rpm.; one 35,000-kw. set, installed 1931. Transformers: two 36,000-kva., 150/110 kv. in outdoor substation; two 22,000-kva., 11/55 kv., oil immersed, sea-water cooled, in indoor sub-station. Unless Concente has been extended, this is largest steam plant in Italy. Main standby plant for Venezia. Planned for 100,000 kw. eventually (six sets), and is reported to be able to supply railways. Italy's largest boiler was added in 1939: made by Tosi to burn coal and produce 200,000 lbs. of steam per hr. at 460 lbs./sq. in. and 750° F.
MEZZOCORONA	About 10 mi. N of Trento, NE of Lake Garda, near Noce Bianco River, Adige Basin.	H	32,000	Owned by Soc. gen. elettr. Cisalpina (Edison); built 1929. Altitude 225 m.; head 123.8 m.; average flow 29.3 cu.m./sec. Water supply: a narrow gorge on the Noce River, a tributary of Adige River, has a dam 50 yds. long and 100 ft. high; a 6-mi. tunnel leads to plant. Generating sets: two 16,000-kw. vertical-Francis sets by Escher Wyss, generating 3-ph., 42/50 cycles at 9.6 kv. Transformers: 18,000 kva., 10/127-140 kv., 42/50 cycles, 3-ph., outdoor-type by Ansaldo. About 1/3 of its output used by rail-ways; this is probably still obtained through a 9,000-kva., 42/16.7-cycle frequency changer. BBC asynchronous type. Scheduled additional water supply may have increased output.

Name	Location	Type	Installed Capacity (kw.)	Remarks
MOLARE	20 mi. NW of Genova, on Orba River, Tanaro Basin.	H	18,000	Owned by Off. Elettr. Genovesi (Edison); built 1925. Destroyed by inundation in 1935; not in official 1937 plant list. Altitude 215 m.; head 105.11 m.; average flow 5.4 cu.m./sec. Two sets, generating 3-ph., 50 cycles at 6 kv.
MOLINE-PONTE D'OLTRA	50 mi. NW of Venezia, on Cismon River, Brenta Basin.	H	16,000	Owned by Soc. idroelettr. del Cismon; built 1929. Altitude 411 m.; head 143.1 m.; average flow 9.67 cu.m./sec. Two sets, generating 3-ph., 42/50 cycles at 9 kv.
MOMPANTERO	30 mi. W of Torino, on Cenischia River, Po Basin, close to Susa.	H	9,000	Under construction in 1938 by SIP. Head 114.40 m.; average flow 2.8 cu.m./sec.
MONTE GIOVE	45 mi. N of Torino; Dora Baltea River and Basin.	H	14,000	Owned by SIP; built 1914. Altitude 385 m.; head 51.01 m.; average flow 18.5 cu.m./sec. Three sets, generating 3-ph., 50 cycles at 5 kv. Supplies Aosta industry.
MORASCO-PONTE	On Vanina River, Ticino Basin, NW of Lake Maggiore, close to Swiss frontier.	H	80,000	Owned by Soc. Edison; began operations in 1939. Replaces older Valdo and Ponte plants (see below), increasing their capacity from 49,000 kw. to 80,000 kw. Adequate storage capacity will permit an annual output of 90 mill. kwh., mainly during winter season.
MORBEGNO	50 mi. NE of Milano; Adda River and Basin.	H	9,700	Owned by State railways; built 1900/29. Altitude 228 m.; head 30 m.; average flow 18 cu.m./sec. Four sets, generating 3-ph., 15.8 cycles at 3850 volts and 20 kv.

Name	Location	Type	Installed Capacity (kw.)	Remarks
NOVATE MEZZOLA (CAITC)	60 mi. N of Milano; Adda Basin.	H	43,200	Owned by Acciaierie e ferriere Lombarde Falck. Utilizes Rivers Codero and Batti. Average flow 1.720 cu.m./sec.; head 700 m. Two sets, generating 3-ph., 42/50 cycles at unknown voltage.
NOVE (NOVE NUOVA)	About 40 mi. N of Venezia; Piave River, Meschio Basin.	H	64,000	Owned by Adriatica; built 1925. Altitude 181 m.; head 99 m.; average flow 33 cu.m./sec. Water: from Piave River through a system of reservoirs and canals. Immediate source is reservoir L. Morto (capacity 3 mill. cu.m.) at outlet from Fadalto. Four penstocks. Seven sets, generating 3-ph., 42 cycles at 6 kv. Transformers: 75 6/60-kv. or 6/130 kv. One of a group of hydro plants feeding Venezia, Trieste, and surrounding areas. In 1939, about 1/3 of its output went to railways. Reported lately made bombproof.
PAISCO	65 mi. NE of Milano, on Allione River, Oglio Basin.	H	8,320	Owned by Soc. gen. elettr. Cisalpina (Edison), built 1924. Altitude 801 m.; head 582.23 m.; average flow 0.9 cu.m./sec. Two sets, generating 3-ph., 42 cycles at 12 kv.
PALLOBIA (CETO)	65 mi. NE of Milano, on Allobia River, Oglio Basin.	H	5,600	Owned by Soc. elettr. Bresciana (Edison); built 1918. Altitude 462 m.; head 502.5 m.; average flow 0.526 and 1.3 cu.m./sec. Two sets, generating 3-ph., 42 cycles at 3.6 kv.
PAVANA	30 mi. SW of Bologna, on Reno River, and Basin.	H	12,000	Owned by State railways; built 1927. Altitude 422 m.; head 42.69 m.; average flow 5.32 cu.m./sec. Water from Reno River by tunnel and penstock. Four generating sets, producing 3-ph., 16.7 and 50 cycles at 3850 and 3300 volts. Built to supply Firenze-Bologna railway line.

Name	Location	Type	Installed Capacity (kw.)	Remarks
PEDESALTO (BELLUNO)	45 mi. NW of Venezia, on Cismon River, Brenta Basin.	H	6,600	Owned by Adriatica; built 1908. Altitude 325 m.; head 54 m.; average flow 10 cu.m./sec. Three sets, generating 3-ph., 42 cycles at 5.5 kv.
PELOS	On Piave River, just W of Pelos, NNE of Belluno, and about 70 mi. N of Venezia.	H	51,000	Owned by Soc. industriale S. Marco (Adriatica); designed for 140 mill. kwh./yr. Head 137 m.; average flow 17.5 cu.m./sec. Water supply: from dams on Piave River (Comelico) and Ansiei River (Santa Caterina), through tunnels about 5 mi. long to an underground expansion chamber just above plant. Two penstocks. Turbo-alternators: three of 17,000 kw., horizontal double Francis-type, 504 rpm., generating 3-ph., 42 cycles at 8.5 kv. Transformers: three of 25,000 kva., 8.5/140 kv., 3-ph., indoor type. Main function seems to be to supplement output of Fadalto and Nove.
PIACENZA	40 mi. SE of Milano.	S	26,000	Owned by Edison; built 1929. Boilers: four, 800 sq. m. heating surface, 32 atm., 400° C; four, 700 sq. m. heating surface, 12 atm., 187° C, all oil burning. Generating sets: two steam turbines, 12,000 kw. each, coupled with two generators, 20,000 kva. each, producing 3-ph., 42-cycle current at 6.5 kv. One source reports some supply to railways.
PIAN SULE	35 mi. W of Torino; Stura River and Basin.	H	5,900	Owned by "Ovesticino" soc. an. distrib. energia elettrica; built 1932. Altitude 1835 m.; head 541 m.; average flow 0.55 cu.m./sec. One set, generating 3-ph., 42/50 cycles at 10 kv.

Name	Location	Type	Installed Capacity (kw.)	Remarks
PIEDIMULERA	60 mi. NW of Milano, on Anza River, Ticino Basin, below Battigio power plant.	H	9,300	Owned by "Dinamo" soc. Ital. imprese elettriche (Edison); built 1907. Altitude 243 m.; head 173.39 m.; average flow 3 cu.m./sec. Five sets, generating 3-ph., 42 cycles at 8 kv.
PIRELLI (ROVESCA)	On right bank of Ovesca River, Ticino Basin; SW of Domodossola and NW of Lake Maggiore.	H	31,500	Owned by Soc. Edison; built 1926. Altitude 789 m.; heads 702.2, 552.2, and 285.2 m. Water from 3 separate reservoirs by system of canals. Four sets, generating 3-ph., 50 cycles at 8.5 kv. One of the important group of plants in Domodossola district feeding Milano area through Borgomanero and Magenta substations. Reported to supply also to railways.
PLIMA	100 mi. NW of Venezia, on Plima River.	H	40,000	Reported to be built in 1930. Head 2,000 ft.
PONTE	On Vanina River, Ticino Basin, NW of Lake Maggiore, close to Swiss frontier.	H	25,000	See above under Morasco-Ponte. Details on old plant: owned by Soc. Edison; head 877.8 m.; average flow 0.831 cu.m./sec; water from Lake Castel (cap. 9.650 mill. cu.m.) and Val Toggia (cap. 15.6 mill. cu.m.) reservoirs by canal, tunnel, and pipe line; one set, generating 3-ph., 42-cycle current at unknown voltage. Feeds Milano and Genova districts.
PONTE CAFFARO (BRESCIA)	70 mi. NE of Milano, on Caffaro River, Oglio Basin.	H	7,000	Owned by Soc. elettr. ed elettroch. del Caffaro; built 1905. Altitude 384 m.; head 249.17 m.; average flow 2.59 cu.m./sec. Four sets and one house set, generating 3-ph., 42 cycles at 9 kv. Supplies company's chemicals plant at Brescia.

Name	Location	Type	Installed Capacity (kw.)	Remarks
PONTE GARDENA	On Isarco River, Adige Basin, just above Ponte all' Isarco.	H	60,000	Owned by Soc. elettr. Alto Adige (Montecatini); built 1938. Output about 220 mill. kwh./yr. to Bolzano aluminum plant. Plant entirely underground, 50 m. x 15 m.; access through a tunnel about 200 m. long with entrance on Brenner highway. Head 61 m.; average flow 80 cu.m./sec. Dam: flat gate weir with movable sluice gates, located near Funes village. Intake works: on right bank of Isarco, protected by submerged wall to keep out debris; 8 mouths, protected by grating 63 m. long. Dufour type settling basin, made up of 2 canals: external for excess water; internal with keel-shaped section containing settling basin apparatus; complete works 355 m. long. Derivation canal: almost entirely in gallery (7514 m. long, w. slope .0001) at end of which is a wider gallery (200 m. long, 82 sq. m. cross section) in which is a spillway, 50 m. long, leading into a vertical well. Last 200 m. stretch of derivation tunnel, enlarged to section with 82 sq. m. area, serves as a forebay, from which a single penstock (cut through rock, lined with reinforced concrete, length 53 m., dia. 6 m.) leads to a steel distributor with branches to each turbo set. Tailrace to Isarco River. Turbines: three of 16,000 kw. (under 59.2 m. head), vertical Francis-type by Riva; 210/250 rpm. Can produce 18,300 kw. under 65.5 m. head. Generators: three of 25,000 kva., 3-ph., 9/11 kv., 42/50 cycles, 210/250 rpm., by Oerlikon. Transformers: three of 25,000 kva., oil type, 10/65/130 kv., by CGE, installed in open air, with current conveyed from machines through gallery 300 m. long to transformers. Connections at 65 kv. to Premesa and Bolzano; at 135 kv. with Bressanone and Bolzano.

Name	Location	Type	Installed Capacity (kw.)	Remarks
PONTE [illegible]	20 mi. W of Genova; Maira River and Basin.	H	9,800	Owned by Comp. imprese elettr. Liguri (Edison) built 1914. Altitude 943 m.; head 192.19 m.; average flow 3.4 cu.m./sec. Three sets, two for 3-ph., 16.7-cycle current at 6 kv.; one for 3-ph., 50-cycle current at 6 kv.
PONTE PIETI	25 mi. N of Torino, on Chiusella River, Baltea Basin.	H Dora	6,100	Owned by "Ovesticino" soc. an. per distribuz. energia elettrica (Edison); built 1924. Altitude 292 m.; head 130 m.; average flow 2.3 cu.m./sec. Two sets, generating 3-ph., 42/50 cycles at 8 kv.; one house set generating 3-ph., 50 cycles at 450 volts.
PONTE SAN MARTINO	NE of Torino, on Lys River, Dora Baltea Basin.	H	30,000	Owned by Soc. idroel. Piemontese-Lombarda E. Breda (SIP); built 1920. Altitude 348 m.; head 541.07 m.; average flow 4.05 cu.m./sec. Water supply: from Lys River and tributaries by tunnel and canal to a small forebay (6,000 cu.m. capacity). Four generating sets, producing 3-ph., 42/50-cycle current at 6 kv. Plant and transformer station on opposite sides of valley--plant on right bank of Lys, built against mountainside; transformer station on left bank, about 100 m. farther south. Transformer station of importance, because all current from SIP Dora Baltea plants passes through it on way to Stura substation near Torino. Housed in stone building because of heavy snows in winter.

Name	Location	Type	Installed Capacity (kw.)	Remarks
PONTETTO	60 mi. NW of Milano, on left bank of Isorno River, Ticino Basin, below Isorno power plant.	H	8,100	Owned by Soc. Edison; built 1926. Altitude 345 m.; heads 119.38 and 301.89 m.; average flow 1.875 and 0.980 cu.m./sec. Four sets, generating 3-ph., 42 cycles at 6 kv.
PORTA VOLTA	At Milano.	S	30,000	Owned by Soc. Edison; built 1897/1922. Not in official 1937 list. Four sets in 1932, generating 3-ph., 42 cycles at 3.6 kv.
PORTO DELLA TORRE	30 mi. NW of Milano, on Ticino River.	H	?20,000	Construction was to have begun in 1939 near Sesto Calende.
PORTO TRENTO	At Milano.	S	32,000	Owned by Az. elettr. municipale di Milano; built 1905. Twelve boilers, 350 and 425° C, 12 and 25 atm., 550, 850, and 1100 sq. m. heating surface. Four turbo sets, generating 3-ph., 42 cycles at 8650 volts.
POSCHIAVINO	70 mi. NE of Milano, on Poschiavino River, Basin, close to Italo-Swiss frontier.	H Adda	9,900	Owned by Soc. Lombarda per distribuz. energia elettrica (SIP); built 1920. Altitude 422 m.; head 91.35 m.; average flow 4.513 cu.m./sec. Two sets generating 3-ph., 50 cycles at 7.5 kv. Two transformers, 6125 kva. capacity. Single building houses both machine room and transformer station.
POZZOLAGO	70 mi. NW of Venezia; Adige Basin.	H	11,000	Owned by Soc. gen. elettr. Cisalpina (Edison); built 1926. Altitude 1146 m.; head 604.42 m.; average flow 0.810 cu.m./sec. Reservoir lago delle Piazze, with 6.1 mill. cu.m. capacity. Three sets, generating 3-ph., 42/50 cycles at 5 kv.

Name	Location	Type	Installed Capacity (kw.)	Remarks
PREDARE	50 mi. W of Bologna; Ozola River, Secchia Basin.	H	42,000	Owned by Soc. gen. elettr. Cisalpina (Edison); built 1921. Heads 246.56 and 282.54 m.; average flow 1.615 and 0.128 cu.m./sec. Seven sets, generating 3-ph., 42/50 cycles at 7 kv.; one set, 6300 kw., generating 3-ph., 16.7 cycles at 7 kv. Frequency changers reported. Supplies railways.
PREMESA (VAL GARDENA)	In Bolzano province, on Gardena River, Adige Basin.	H	8,960	Owned by Soc. elettr. Alto Adige (Montecatini); built 1926. Altitude 503 m.; head 320.96 m.; average flow 2.[illegible] cu.m./sec. [illegible] generating 3-ph., 42/50 cycles at unknown voltage.
RIVA (TRENTO)	80 mi. W of Venezia; Mincio Basin.	H	58,600	Owned formerly by Soc. an. di elettr. del Ponale, now operated by Edison and Adriatica; built 1929. Altitude 69 m.; head 581.8 m.; average flow 3.3 cu.m./sec. Water supply: from L. Ledro, with reservoir capacity of 45 mill. cu.m. Water by tunnel, surge tank, and 2 penstocks to plant. Power house: 174 ft. x 55 ft.; concrete walls; reinforced concrete floors and roof. Three sets, generating 3-ph., 42/50 cycles at 6 kv. Transformers: two of 21,000 kva., and one of 32,000 kva. capacity, 6/132 kv.
ROASCO INF. (GROSIO)	80 mi. NE of Milano, on Roasco River, Adda Basin.	H	23,500	Owned by Az. elettr. municipale Milano; built 1922. Altitude 680 m.; head 510 m.; average flow 1.5 cu.m./sec. Two sets, generating 3-ph., 42 cycles at 10 kv. One source reports plant as automatic and probably controlled from Grosotto (see above); official information gives no such indication.

Name	Location	Type	Installed Capacity (kw.)	Remarks
ROSONE	On Orco River (Orco Basin), NW of Torino, 20 mi. almost due S of Aosta.	H	54,400	Owned by Az. municipale di Torino; built 1929. Altitude 697 m.; head 812.7 m.; average flow 3 cu.m./sec. Water from artificial L. Ceresole Reale by system of canals and pipes; secondary supply from L. Eugio. Four turboalternators, 13,600 kw. each, 500 rpm., generating 3-ph., 50 cycles at 6.7 kv. Feeds Torino.
RUFFINATI-SALSOMINORE	30 mi. NE of Genova, on Aveto River, Trebbia Basin.	H	15,000	Owned by Soc. forze idraul. della Liguria (Edison); built 1930. Altitude 403 m.; head 212.1 m.; average flow 5 cu.m./sec. Two sets, generating 3-ph., 42/50 cycles at 7 kv.
RUSSIZ	75 mi. NE of Venezia; Isonzo Basin.	H	19,000	Not operating by April 1942.
SAMPEYRE	40 mi. SW of Torino; Varaita River and Basin, below Casteldelfino.	H	36,000	Thought to be Edison's Val Varaita II. Head 1100 ft. Two generating sets. The storage reservoir supplying Casteldelfino (see above) and Sampeyre allows regulation of 100 mill. kwh. of a total output of 125 mill. kwh. of the two plants. Began operations July 1941. These are first large plants on Varaita River.
SAMPIERDARENA	At Genova.	S	17,000	Owned by Off. Elettr. Genovesi (Edison); built 1903. Boilers: four of 490 sq. m. heating surface, two of 616 sq. m. heating surface, two of 700 sq. m. heating surface, all automatic feed, coal burning, 12 atm., 300° C. Seven steam turbo sets, generating 3-ph., 50 cycles at 3 kv.

Name	Location	Type	Installed Capacity (kw.)	Remarks
SAN BERNARDO	Near Liro River, Adda Basin, N of Lake Como, close to Swiss frontier.	H	20,200	Owned by Soc. gen. elettr. Cisalpina (Edison), built 1928. Altitude 1043 m.; heads 1014 and 35 m.; average flow 0.5 and 0.375 cu.m./sec. Water from artificial L. Truzzo (15.6 mill. cu.m. capacity), which is dammed at E end. Turbo-alternators: two of 10,000 kw., Tosi-BBC Pelton-type, 630/750 rpm., generating 3-ph., 42/50 cycles at 7.6 kv.; one house set, 200 kw., generating 3-ph., 42 cycles at 525 volts. Supplies Milano, Genova, and Bologna through San Francesco; reported also to supply railways. Scheduled additional water supply may have increased output.
SAN DALMAZZO	In Roya Basin, W of Genova, close to Italo-French frontier.	H	39,000	Owned by Comp. imprese elettr. Liguri (Edison); built 1914. L. delle Mesce is principal reservoir. Altitude 647 m.; head 682.6 m.; average flow 1.45 cu.m./sec. Five turboalternators, 7800 kw. each, by Riva, generating (3) 3-ph., 50 cycles at 5250 volts and (2) 3-ph., 16.7 cycles at 5250 volts. Largest of group of plants in the hills N of Ventimiglia, close to French frontier. Mainly feeds Genova area and railways (reported to have taken 14,000 kw. in 1937).
SAN DAMIANO	85 mi. W of Genova; Maira River and Basin.	H	14,000	Owned by Comp. imprese elettr. Liguri (Edison); built 1916. Altitude 706 m.; head 205 m.; average flow 4.5 cu.m./sec. Three sets, generating 3-ph., 50 cycles at 6120 volts. Reported to supply rails.

Name	Location	Type	Installed Capacity (kw.)	Remarks
SAN FRANCESCO (MESE)	Close to junction of Liro and Nera Rivers, N of Lake Como, close to Swiss frontier, Adda Basin.	H	140,000	Owned by Soc. gen. elettr. Cisalpina (Edison); built 1927. Altitude 275 m.; head 769.45 m.; average flow 6.75 cu.m./sec. Water from Liro River (Spluga reservoir), by canal, tunnel, and pipeline. Turboalternators: three 27,000 kw. Riva-BBC Pelton sets, 420/500 rpm., generating 3-ph., 42/50 cycles at 8 kv.; two 29,500-kw. sets, generating 3-ph., 42/50 cycles at 8 kv.; one house set, 600 kw., generating 3-ph., 50 cycles at 525 volts. Transformers: space for seven 30,000 kva., 8/150 kv., 3-ph., indoor type. Main distribution from indoor substation. Planned for 7 sets. Supplies Milano, Genova, Bologna, and railways. Scheduled additional water supply may have increased output.
SAN MICHELE	25 mi. E of Genova, on Sturla and Penna Rivers.	H	8,300	Owned by Soc. forze idraul. della Liguria (Edison); built 1923. Altitude 170 m.; head 395.5 and 179.5 m.; average flow 0.8 and 0.45 cu.m./sec. Three sets, generating 3-ph., 50 cycles at 6 kv.
SAN PIETRO D'ORZIO	40 mi. NE of Milano, on Brembo River, Adda Basin.	H	9,900	Owned by Soc. elettrica Bergamasca (Edison); built 1925/27. Altitude 430 m.; heads 40.75 and 412.73 m.; average flow 8 and 0.5 cu.m./sec. Five sets, generating 3-ph., 42/50 cycles at 3.5 kv.
SAN SILVESTRO (TRENTO)	50 mi. NW of Venezia, on Cismon River, Brenta Basin.	H	16,000	Owned by Soc. idroel. del Cismon; built 1930. Altitude 580 m.; head 308 m.; average flow 4.55 cu.m./sec. Two sets, generating 3-ph., 42/50 cycles at 9 kv.

Name	Location	Type	Installed Capacity (kw.)	Remarks
SANTA LUCIA	90 mi. NE of Venezia, on Isonzo River.	H	34,500	Owned by Adriatica; began operations 1938. Output 106 mill. kwh. Head 140 ft.. Three Francis sets, generating at 10 kv. Three transformers, 10/135 kv., 15,000 kva. each, in outdoor substation. Plant is 40 ft. underground.
SANTA MARIA	30 mi. SW of Bologna, on Brasimone River, Reno Basin.	H	5,400	Owned by Soc. idroel. del Brasimone - Soc. Bolognese di elettricita (Adriatica); built 1911. Altitude 508 m.; head 311.8 m.; average flow 0.427 cu.m./sec. Three sets, generating 3-ph., 50 cycles at 5 kv.
SARCA MOLVENO	80 mi. NW of Venezia, on Sarca River.	H	?100,000	An ambitious project, jointly undertaken by Edison and SIP, assisted by Istituto Ricostruzione Industriale. Planned for 1.4 bill. kwh./yr. Construction may have begun 1940, but completion not expected before 1945.
SAORTO-ACCEGLIO	100 mi. W of Genova, on Maira River, near confluence with Venerzio Torrent, about 0.6 mi. E of Acceglio commune.	H	19,000	Owned by Comp. imprese elettr. Liguri (Edison); built 1914. Altitude 1147 m.; head 367.55 m.; average flow 1.8 cu.m./sec. Water from reservoir on the Maira by canal about 7 mi. long. Tailrace to Ponte Marmore. One penstock, 2201 ft. long; 1300-1000 mm. dia. Three sets, generating 3-ph., 16.7 cycles at 6 kv. Supplies railways.

Name	Location	Type	Installed Capacity (kw.)	Remarks
SAVONA	At Savona, 25 mi. SW of Genova.	S	17,000	Owned by Comp. imprese elettriche Liguri (Edison); built 1911. Boilers: six, automatic feed, 496 sq. m. heating surface; two, semi-automatic, 496 sq. m. heating surface; four, automatic, 574 sq. m. heating surface; all 12 atm., 300° C, coal burning. Four steam turbo sets, generating 3-ph., 50 cycles at 5.2 kv. and 3-ph., 16.7 cycles at 3.3 kv. Supplies railways; acts as standby to Maira and Enza plants.
SELVANIZZA	60 mi. N of Livorno, on Cedra and Enza Rivers.	H	5,000	Owned by Soc. [illegible] elettrica (Edison); built 1920. Altitude 473 m.; head 101.41 m.; average flow 5.570 cu.m./sec. Two sets, generating 3-ph., 42 cycles at 3.6 kv.
SENALES	100 mi. NW of Venezia, on Senales River, Adige Basin.	H	13,000	Owned by cities of Bolzano and Merano; built 1911. Altitude 545 m.; head 318.76 m.; average flow 3.390 cu.m./sec. Two sets, generating 3-ph., 42/50 cycles at 18 kv. Supplies Bolzano and Merano.
SONICO	At foot of Mt. Adamello, near left bank of Oglio River below affluence of Oglio d'Edolo; NW of Lake Garda.	H	60,000	Owned by Soc. gen. elettr. Cisalpina (Edison); built 1923. Altitude 641 m.; head 440 m.; average flow 8.38 cu.m./sec. Water supply: Temu tailrace (see below) and Oglio River, by a system of canals, tunnels, and pipe lines. Power plant is built of masonry, with iron-reinforced roof. Open-air transformer station immediately to east of plant: connections with Temu and San Polo d'Enza substation. Five sets, generating 3-ph., 42/50 cycles at 7 kv. Feeds Milano and Bologna; also reported to supply railways. Scheduled additional water supply may have increased output.

Name	Location	Type	Installed Capacity (kw.)	Remarks
SORIO	60 mi. W of Venezia, Adige River and Basin, 3 km. downstream from Colombarolo power plant.	H	6,500	Owned by Soc. Adriatica di elettricita; built 1909. Water from Adige River and Colombarolo tailrace, by canal to power house. Six sets, generating 3-ph., 42 cycles at 3.3 kv. A small reserve steam plant beside Sorio (total capacity 1800 kw.). In 1938 Adriatica was building a third hydro plant (Sorio II) which when completed was to replace Colombarolo (2210 kw. installed capacity) and take over some of load of Sorio I above. Pressure tunnel had been finished, and generators of 11,200 kw. installed capacity installed. Flow utilized was 96 cu.m./sec.; head 11.35 m. No information as to exact location or extent of its present functions.
SPEZIA (PIANTA)	At Spezia, 40 mi. NW of Livorno.	S	11,000	Owned by Comp. imprese elettr. Liguri (Edison); built 1912. Boilers: six automatic feed, coal burning, 681 sq. m. heating surface; one, non-automatic feed, oil burning, 600 sq. m. heating surface; two, automatic feed, coal burning, 496 sq. m. heating surface; all 14 atm., 300° C. Four steam turbogenerating sets, generating 3-ph., 42 cycles at 8 kv.
SUSA	30 mi. W of Torino; Dora Liparia Basin and River.	H	10,500	Owned by Az. elettr. municipale di Torino; built 1924. Altitude 510 m.; head 127.99 m.; average flow 8.750 cu.m./sec. Two sets, generating 3-ph., 50 cycles at 8 kv. Supplies Torino; one source reports some supply to railways.

Name	Location	Type	Installed Capacity (kw.)	Remarks
SUVIANA	On Limentra di Treppio liver, Reno Basin, at N end of Lake Suviana, 30 mi. SW of Bologna.	H	42,000	Owned by State railways; built about 1934. Head 68.17 m.; average flow 8.42 cu.m./sec. Water supply: a 300 ft.-high gravity dam on L. Suviana (reservoir capacity 30 mill. cu.m.). Dam is highest in Italy. Generating sets: one, 15,000-kw., vertical Francis-type by Tosi-BBC, 210/250 rpm.; two, 13,000 kw. as above, but CGE alternators. System: 3-ph., 16.7 and 50 cycles, at unknown voltages. One house set, 435 kw. capacity. Transformers: three 20,000 kva., 3-ph. Ansaldo units, in outdoor substation. Highly complex switchgear. Alternators can function also as synchronous condensers.
TARTANO	50 mi. NE of Milano, on Tartano River, Adda Basin.	H	7,100	Owned by Soc. idroel. Comacina (Edison); built 1924. Altitude 375 m.; head 493.64 m.; average flow 1.2 cu.m./sec. Two sets, generating 3-ph., 50 cycles at 9 kv.
TEGLIA	50 mi. E of Genova, on Teglia River, Magra Basin, near Pontremoli.	H	30,000	Owned by Acciaierie e ferriere Lombarde Falck. Head 137.25 m.; average flow 1.07 cu.m./sec. Generating sets: three of 5,000 kw., producing 3-ph., 16-cycle current at unknown voltage; three of 5,000 kw., producing 3-ph., 42/50-cycle current at unknown voltage. Some supplies to railways.

TEL	100 mi. NW of Venezia, on Adige River (Adige Basin), about 6 km. NW of Merano.	H	23,000	Owned by cities of Bolzano and Merano; leased by Montecatini from them; built 1898. Altitude 431 m.; head 71.34 m.; average flow 24 cu.m./sec. Augmented 1924/26 by Montecatini. Four sets, generating 3-ph., 42/50 cycles at 10 and 3.5 kv. Works with Merlengo; supplies Merano nitrogen works.
TEMU	On Oglio River (Oglio Basin), NW of Lake Garda.	H	47,000	Owned by Soc. gen. elettr. Cisalpina (Edison); built 1922. Altitude 1096 m.; head 775.75 m.; average flow 1.295 cu.m./sec. L. Avio acts as surge basin, and water conveyed by pressure tunnel directly to penstocks. Generating sets: five, Pelton-type by Riva-AEG, generating 3-ph., 42/50 (cont.)

Name	Location	Type	Installed Capacity (kw.)	Remarks
TEMU (Cont.)				cycles at 6 and 7 kv. Most northerly of Oglio plants feeding NW and central Italy. Scheduled additional water supply may have increased output.
TOLMINO	90 mi. NE of Venezia; Isonzo Basin.	H	9,000	Not operating in April 1942.
TREZZO D'ADDA	20 mi. NE of Milano; Adda River and Basin.	H	13,000	Owned by Soc. forze idraul. di Trezzo d'Adda (Edison); built 1906. Altitude 150 m.; head 7.4 m.; average flow 94 cu.m./sec. Ten sets, generating 3-ph., 42/50 cycles at 14 kv.
TURBIGO	20 mi. WNW of Milano, on right bank of Naviglio Grande Canal just below bridge carrying the Novara-Soronno railway over the Ticino River.	S	29,000	Owned by Soc. Lombarda per distribuz. energia elettrica (SIP); built 1929. Two boilers, automatic feed, coal burning, 2000 sq. m. heating surface, 28 atm., 375° C. One Tosi-Ganz turbo-alternator, 1500 rpm., generating 3-ph., 50 cycles at 11.5 kv. One 43,200 kva., 11/145 kv., 3-ph. Breda transformer, indoor type. Alternator can function also as a synchronous condenser. Plant linked at 11 kv. with the Turbigo substation (terminal of 220-kv. line from Cardano).
TURBIGO I	20 mi. WNW of Milano, near commune of Lonate Pozzolo.	H	5,415	Owned by Soc. Lombarda per distribuz. energia elettrica (SIP); built 1904. Altitude 140 m.; head 8.27 m.; average flow 86.4 cu.m./sec. Five sets, generating 3-ph., 50 cycles at 11 kv. Plant may have been enlarged in 1939.
TURBIGO II	On Naviglio Grande Canal, facing Turbigo I.	H	1,590	Owned by Soc. Lombarda per distribuz. energia elettrica (SIP); built 1922. Altitude 133 m.; head 4.6 m.; average flow 35 cu.m./sec. One set, generating 3-ph., 50 cycles at 11.5 kv.

Name	Location	Type	Installed Capacity (kw.)	Remarks
TORINO	At Torino.	S	8,000	Owned by Soc. elettricita Alta Italia (SIP); built 1907. Boilers: three, automatic feed, 555 sq. m. heating surface; three, automatic feed, 550 sq. m. heating surface; all 12 atm., 280° C, coal burning. Two steam turbo sets, generating 3-ph., 50 cycles at 3 kv.
VALDO	On Vanina River, Ticino Basin, NW of Lake Maggiore, close to Swiss frontier.	H	24,000	Probably replaced by Morasco-Ponte (see above). Details on old plant: Owned by Soc. Edison; built 1923. Altitude 1275 m.; head 766.06 m.; average flow 1 cu.m./sec. Two turboalternators, 12,000 kw., horizontal Pelton-type by Riva/BBC, 504 rpm., generating 3-ph., 42 cycles at 9 kv. Transformers: 9/60 kv.
VALLA (SPIGNO MONFERRATO)	30 mi. W of Genova, on Bormida River, Tanaro Basin.	H	9,300	Owned by Acciaierie e ferriere Lombarde Falck; built 1927. Altitude 226 m.; head 57 m.; average flow 1.705 and 7.150 cu.m./sec; reservoir capacity 2.25 mill. cu.m. Three sets, generating 3-ph., 50 cycles at 6.5 kv.
VARA II	35 mi. E of Genova, near San Michele.	H	75,000	Head 150 ft. Edison began construction in 1939, with completion scheduled for 1942.
VARZO	On right bank of Diveria River, Ticino Basin, NW of Domodossola and Lake Maggiore.	H	25,000	Owned by "Dinamo" soc. Ital. imprese elettriche (Edison); built 1912. Altitude 535 m.; head 36.74 m.; average flow 4.038 cu.m./sec. Nine sets, generating 3-ph., 42 and 16 cycles at 3.3 kv. One of the important group of plants in the Ticino. Basin which supplies Milano area and railways.

Name	Location	Type	Installed Capacity (kw.)	Remarks
VEDELLO	50 mi. NE of Milano, on Agneda River, Adda Basin.	H	18,000	Owned by Acciaierie e ferriere Lombarde Falck. Utilizes waters of Venina Sup. (average flow 0.36 cu.m./sec.) and its affluent the Caronno (average flow 0.45 cu.m./sec.), with heads of 415.52 m.; and the Zappello (flow 0.36 cu.m./sec., head 387.27 m.). Two sets, generating 3-ph., 42/50 cycles at unknown voltages.
VENAUS (VENALZIO)	In Moncenisio area, NW of Susa and W of Torino; on Cenischia River, Dora Riparia Basin.	H	48,000	Owned by Forze idraul. del Moncenisio (SIP); built 1922. Altitude 622 m.; head 1097.7 m.; average flow 2 cu.m./sec. Reservoir, L. Moncenisio, with a capacity of 31.9 mill. cu.m. Water from here through Gran Scala plant (see above). Turboalternators: three, 16,000 kw., Pelton-type by Riva/BBC, 500 rpm., generating 3-ph., 50 cycles at 6.5 kv. Each alternator is coupled direct to its own transformer (3-ph. indoor water-cooled type by BBC): two 24,000 kva., 6.6/75 kv.; one 21,200 kva., 6.6/75 kv.; one 7000 kva., 30/6.6 kv. for power from Gran Scala. Most important plant of the Moncenisio group feeding Torino; also gives some supply to railways. Uses highest head of any Italian hydro plant.
VENINA (PIATEDA)	60 mi. NE of Milano, on Venina Inf. River, Adda Basin, near Sondrio.	H	55,000	Owned by Acciaierie e ferriere Lombarde Falck; built 1923. Altitude 298 m.; head 719.5 m.; average flow 1.7 and 1 cu.m./sec. Reservoir L. Venina with a capacity of 9.5 mill. cu.m. One source reports utilization of tailrace from Armisa (see above). Five sets, generating 3-ph., 42 cycles at 6.6 kv.

Name	Location	Type	Installed Capacity (kw.)	Remarks
VERRES	40 mi. N of Torino, on Evancon River, Dora Baltea Basin.	H	17,100	Owned by Soc. Costruz. A. Brambilla; built 1914. Altitude 400 m.; head 248.18 m.; average flow 3.25 cu.m./sec. Eight sets, three of 1720 kw. each generating 3-ph., 50 cycles at 5250 volts; rest generating DC at unknown voltage. Supplies local hydrogen plant.
VIGEVANO	15 mi. SW of Milano, Ticino River and Basin.	H	5,400	Owned by Soc. Edison; built 1906. Altitude 89 m.; head 18.63 m.; average flow 19.445 cu.m./sec. Five sets, generating 3-ph., 42 cycles at 2.7 kv.
VILLA DI CHIAVENNA	60 mi. N of Milano, on Mera River.	H	12,000	Head 4600 ft. Generation at 42 cycles; output for railways. A dam reported under construction in the area, Sept. 1942.
VIVERONE	In Dora Baltea Basin; Lakes Viverone and Bertignano.	H	6,000	Owned by Soc. an. elettricita Alta Italia (SIP); built 1913. Altitude 232 m.; head 143 m.; average flow 0.450 cu.m./sec. Two sets, generating 3-ph., 50 cycles at 5.5 kv.
VIZZOLA	On Ticino River (Ticino Basin) near its outlet from Lake Maggiore.	H	33,000	Owned by SIP; expected to be in full operation in 1939. Replaces an old 12,000-kw. plant. Altitude 500 ft.; head about 100 ft. Water: from Ticino River by 3-mi.-long canal. Each turbine has its own 13 ft. dia. penstock, 100 ft. long, without control valve. Turboalternators: three 10,900-kw., vertical Francis-type by Tosi, 157/187 rpm., generating at 42 or 50 cycles. Plant designed for output of 213 mill. kwh./yr.

Name	Location	Type	Installed Capacity (kw.)	Remarks
VOBARNO	65 mi. E of Milano, on Chiese River, Oglio Basin.	H	17,000	Owned by Soc. elettr. Bresciana (Edison); built 1931. Altitude 257 m.; head 104.83 m.; average flow 16.38 cu.m./sec. Reservoir L. d'Idro, with capacity of 75 mill. cu.m. Two sets, generating 3-ph., 42/50 cycles at 6.5 kv. Probably expanded in 1939, perhaps to extent of 6,000 kw.
ZAPPELLO	60 mi. NE of Milano, on Venina River, Adda Basin, S of Sondrio.	H	9,000	Owned by Acciaierie e ferriere Lombarde Falck; built 1932. Altitude 1425 m.; head 360 m.; average flow 0.36 cu.m./sec. Reservoir L. Venina, with capacity of 9.5 mill. cu.m. Plant reported underground. Two sets, generating 3-ph., 42 cycles at 13.5 kv.
ZOGNO	35 mi. NE of Milano, on Brembo River, Adda Basin.	H	5,900	Owned by Soc. Edison; built 1904. Altitude 290 m.; head 57.76 m.; average flow 8.375 cu.m./sec. Four sets, generating 3-ph., 42 cycles at 2.7 kv.

APPENDIX III

NORTH ITALY: ELECTRICITY PRODUCTION, 1937, BY SINGLE MONTHS
(Thousands of KWH)

PIEMONTE

	Thermal	Hydro	Total
Jan.	3,495.6	236,877.3	240,372.9
Feb.	5,052.0	201,499.1	206,551.1
March	5,823.0	210,272.0	216,095.0
April	2,567.2	257,679.9	260,247.1
May	1,322.7	332,941.7	334,264.4
June	1,034.3	353,822.9	354,857.2
July	1,153.6	370,753.9	371,907.5
Aug.	920.2	316,578.4	317,498.6
Sept.	1,296.3	332,012.2	333,308.5
Oct.	3,133.3	351,339.4	354,472.7
Nov.	4,634.4	317,866.9	322,501.3
Dec.	4,104.3	299,652.5	303,756.8
Total	34,536.9	3,581,296.2	3,615,833.1

LOMBARDIA

Jan.	10,237.7	202,531.4	212,769.1
Feb.	7,259.3	181,915.5	189,174.8
March	5,424.6	222,030.3	227,454.9
April	2,410.9	265,903.6	268,314.5
May	2,763.8	291,101.2	293,865.0
June	2,454.9	303,620.1	306,075.0
July	2,122.1	351,979.1	354,101.2
Aug.	3,172.9	332,526.3	335,699.2
Sept.	3,081.3	335,051.3	338,132.6
Oct.	2,230.8	343,041.8	345,272.6
Nov.	2,289.8	299,271.4	301,561.2
Dec.	2,649.8	294,556.8	297,206.6
Total	46,097.9	3,423,528.8	3,469,626.7

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VENEZIE

	Thermal	Hydro	Total
Jan.	7,388.5	175,073.7	182,462.2
Feb.	5,079.1	156,811.5	161,890.6
March	4,249.7	206,704.8	210,954.5
Apr.	3,991.2	236,122.1	240,113.3
May	4,011.6	266,122.1	270,133.7
June	3,923.4	290,534.1	294,457.5
July	4,153.0	319,303.1	323,456.1
Aug.	6,300.7	313,036.0	319,336.7
Sept.	6,173.6	306,159.5	312,333.1
Oct.	4,489.6	299,380.3	303,869.9
Nov.	3,816.7	282,669.2	286,485.9
Dec.	4,302.4	267,877.2	272,179.6
Total	57,879.5	3,119,793.6	3,177,673.1

LIGURIA

Jan.	3,881.7	11,924.6	15,806.3
Feb.	7,956.2	16,946.2	24,902.4
March	675.1	19,660.2	20,335.3
Apr.	563.7	14,971.3	15,535.0
May	664.1	12,131.1	12,795.2
June	614.6	10,589.4	11,204.0
July	652.1	11,273.1	11,925.2
Aug.	564.7	10,017.1	10,581.8
Sept.	560.6	9,976.2	10,536.8
Oct.	699.4	13,031.0	13,730.4
Nov.	609.7	14,710.4	15,320.1
Dec.	569.1	15,217.8	15,786.9
Total	18,011.0	160,448.4	178,459.4

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EMILIA

	Thermal	Hydro	Total
Jan.	52.4	29,294.5	29,346.9
Feb.	39.3	45,229.7	45,269.0
March	49.6	66,971.9	67,021.5
Apr.	292.0	49,901.5	50,193.5
May	40.6	38,571.9	38,612.5
June	50.1	22,416.3	22,466.4
July	66.3	15,242.7	15,309.0
Aug.	1,842.9	20,217.3	22,060.2
Sept.	1,445.2	31,875.5	33,320.7
Oct.	558.7	35,142.3	35,701.0
Nov.	46.5	42,644.4	42,690.9
Dec.	43.7	43,895.3	43,939.0
Total	4,527.3	441,403.3	445,930.6

TOTAL NORTH ITALY

Jan.	25,055.9	655,701.5	680,757.4
Feb.	25,385.9	602,402.0	627,787.9
March	16,222.0	725,639.2	741,861.2
Apr.	9,825.0	824,578.4	834,403.4
May	8,802.8	940,868.0	949,670.8
June	8,077.3	980,982.8	989,060.1
July	8,147.1	1,068,551.9	1,076,699.0
Aug.	12,801.4	992,375.1	1,005,176.5
Sept.	12,557.0	1,015,074.7	1,027,631.7
Oct.	11,111.8	1,041,934.8	1,053,046.6
Nov.	11,397.1	957,162.3	968,559.4
Dec.	11,669.3	921,199.6	932,868.9
Total	161,052.6	10,726,470.3	10,887,522.9

APPENDIX IV. LOCAL ELECTRICITY SUPPLIES.

NAME	TYPE	PHASE	CYCLE	VOLT
Abano Terme	AC	3	42	125/220
Abbadia Cerreto	AC	3	42	145/250
Abbadia Lariana	AC	3	42	115/200
Abbiategrasso	AC	3	42	125/220
Acceglio	AC	3	42	125/220
Acquafredda	AC	3	42	125/220
Acquanegra Cremonese	AC	3	42	145/250
Acquanegra Sul Chiese	AC	3	42	125/220
Acqui	AC	3	50	125/220
Adrara San Martino	AC	3	42	125/220
Adrara San Rocco	No electricity			
Adria	AC	3	42	125/220
Adro	AC	3	42	125/220
Affi	AC	3	42	125/220
Agazzano	AC	3	42	125/220
Agliano	AC	3	50	125/220
Aglie'	AC	3	50	125/220
Agna	AC	3	42	125/220
Agnadello	AC	3	42	145/220
Agnosine	AC	3	42	125/220
Agordo	AC	3	50	115/200
Agra	AC	3	50	110/190-500
Agrate Brianza	AC	3	42	145/250
Agrate Conturbia	AC	3	42	130/270
Agugliaro	No electricity			
Aicurzio	AC	3	42	220/220
Aidussina	DC	-	-	220
Aidussina	AC	3	50	220/380
Aiello	AC	3	50	150
Ailoche	AC	3	42	145/250
Airasca	AC	3	50	125/220
Airole	AC	3	50	125/220
Airuno	AC	3	42	125/220
Aisone	DC	-	-	125
Ala	AC	3	50	220
Ala Di Stura	AC	3	50	125/160
Alagna	AC	3	42	125/220
Alagna Valsesia	AC	3	50	120
Alano Di Piave	AC	3	42	125/220
Alassio	AC	3	50	127/220
Alba	AC	3	50	125/220
Albairate	AC	3	42	125/220
Albano Sant'Alessandro	AC	3	50	150/260
Albano Vercellese	AC	3	42	125/220
Albaredo D'Adige	AC	3	42	125/220
Albate	AC	3	50	125/220
Albavilla	AC	3	42	160/160
Albenga	AC	3	50	127/220
Albese Con Cassano	AC	3	42	160/160
Albettone	AC	3	42	125/220
Albiano	AC	3	50	250

NAME	TYPE	PHASE	CYCLE	VOLT
Albiate	AC	3	42	125/125-500
Albignasego	AC	3	42	125/220
Albinea	AC	3	42	125/220
Albino	AC	3	50	160
Albiolo	AC	3	50	125
Albissola Marina	AC	3	50	127/220
Albissola Superiore	AC	3	50	127/220
Albizzate	AC	3	50	125/125-500
Albonese	AC	3	50	125/220
Albugnano	No electricity			
Albuzzano	AC	3	42	125/220
Aldeno	AC	3	50	220
Aldeno	AC	3	42	200
Alessandria	AC	3	42	125/220
Alessandria	DC	-	-	220/440
Alfianello	AC	3	42	125/220
Alfiano Natta	AC	3	50	125/220
Alfonsine	AC	3	42	115/200
Alice Bel Colle	AC	3	50	125/220
Alice Castello	AC	3	50	125/220
Alice Superiore	AC	3	50	120/210
Alleghe	AC	3	50	115/200
Allein	No electricity			
Alluvioni Cambio'	AC	3	42	125/220
Almè Con Villa	AC	3	50	150/260-500
Almè Con Villa	AC	3	50	150
Almeno San Bartolomeo	AC	3	50	150/150-260
Almenno San Salvatore	AC	3	50	150/150-260
Almese	AC	3	50	125/220
Alonte	No electricity			
Alpette	No electricity			
Alpignano	AC	3	50	125/220-500
Alseno	AC	3	42	125/220
Alserio	AC	3	42	160
Altare	AC	3	50	160/270
Altavilla Monferrato	AC	3	50	125/220
Altavilla Vicentina	AC	3	42	125/220
Altissimo	AC	3	42	125/220
Altivole	AC	3	42	125/220
Alzano Lombardo	AC	3	50	160
Alzate Brianza	AC	3	42	160/160
Amaro	AC	3	42	125/220
Ambivere	AC	3	50	125/220
Ameglia	AC	3	42	125/220
Ameno	AC	3	42	125/220
Ampezzo	AC	3	50	145
Andalo Valtellino	AC	3	50	125/220
Andezeno	AC	3	50	125/220
Andora	AC	3	50	127/220
Andorno Micca	AC	3	50	125/220
Andorno Micca	AC	3	50	160
Andorno Micca	DC	-	-	170/340
Andrate	AC	3	50	125/220
Andreis	No electricity			

NAME	TYPE	PHASE	CYCLE	VOLT
Anfo	DC	-	-	150
Angera	AC	3	50	110/190
Angera	AC	3	50	125/125-500
Angiari	AC	3	42	125/220
Angolo	AC	3	42	125/220
Angolo	AC	3	36	120
Angrogna	DC	-	-	220/440
Anguillara Veneta	AC	3	42	125/220
Annicco	AC	3	42	145/250
Annono Di Brianza	AC	3	42	125/220
Annono Veneto	AC	3	42	125/220
Antegnate	AC	3	50	145/250
Antey-Saint-Andre'	AC	3	50	125/220
Antignana	No electricity			
Antignano	AC	3	50	125/220
Antrona Schieranco	AC	3	42	145/220
Anzano Del Parco	AC	3	42	160
Anzola Dell' Emilia	AC	3	42	125/220
Aosta	AC	3	50	150/250-500
Aosta	AC	3	50	150/260
Appiano	AC	3	46	120
Appiano Gentile	AC	3	50	125/220
Apriano	AC	3	50	200
Aprica	AC	3	50	125/220
Aquileia	AC	3	42	125/220
Aramengo	AC	3	50	125/220
Arba	No electricity			
Arborio	AC	3	42	125/220
Arcade	AC	3	42	125/220
Arcene	AC	3	50	140
Arcisate	AC	3	50	110/190
Arcisate	AC	3	50	110/190-500
Arco	AC	3	50	110
Arcole	AC	3	42	125/220
Arconate	AC	3	50	125
Arconate	AC	3	50	125/125-500
Arcore	AC	3	42	125/220
Arcugnano	AC	3	42	125/220
Ardenno	AC	3	50	110
Ardenno	AC	3	50	125/125-500
Ardenno	AC	3	50	160
Ardesio	AC	1	50	125
Ardesio	AC	3	50	125/220
Arena Po	AC	3	42	125/220
Arese	AC	3	50	127/220
Arenzano	AC	3	50	127/220
Argegno	AC	1	50	120
Argelato	AC	3	42	125/220
Argenta	AC	3	42	125/220
Argentera	No electricity			
Ariano Nel Polesine	AC	3	42	125/220
Arignano	AC	3	50	220
Arizzano	AC	3	42	125/220
Arluno	AC	3	50	125/220

NAME	TYPE	PHASE	CYCLE	VOLT
Arluno	AC	3	50	125/125-500
Armeno	AC	3	42	130/220
Arno'	AC	3	50	150
Arona	AC	3	42	125/220
Arqua' Petrarca	AC	3	42	125/220
Arqua' Polesine	AC	3	42	125/220
Arquata Scrivia	AC	3	50	150/260
Arre	AC	3	42	125/220
Arsago	AC	3	50	125/125-500
Arsie'	AC	3	50	140/250
Arsiero	AC	3	42	127/220
Arta	AC	3	42	125/220
Artegna	AC	3	50	115/200
Arvier	AC	3	50	140/250
Arvier	AC	3	50	125/220
Arzago D'Adda	AC	3	50	145/250
Arzignano	AC	3	42	125/220
Asiago	AC	3	42	127/220
Asigliano Veneto	AC	3	42	125/220
Asigliano Vercellese	AC	3	42	125/220
Asola	AC	3	42	125/220
Asolo	AC	3	50	115/200
Assago	AC	3	42	160
Asso	AC	3	42	160
Asti	AC	3	42	125/220
Asti	AC	3	50	125/220
Asti	AC	3	50	125
Attimis	AC	3	42	125/220
Aurano	AC	3	42	145/250
Aurano	AC	3	42	125/220
Auronzo	AC	3	42	115/200
Averara	DC	-	-	110
Averara	DC	-	-	160
Avelengo	AC	3	46	120
Aviano	AC	3	42	125/220
Aviatico	AC	3	50	160
Avigliana	AC	3	50	125/220
Avio	AC	3	50	150
Avolasca	No electricity			
Ayas	AC	3	50	125/220
Ayas	DC	-	-	130
Azoglio	AC	3	50	125/220
Azzanello	AC	3	42	145/250
Azzano Decimo	AC	3	42	125/220
Azzano San Paolo	AC	3	50	150
Azzate	AC	3	50	110/190-500
Baceno	AC	3	42	125/220
Badalucco	DC	-	-	110
Badia Calavena	AC	3	42	125/220
Badia Pavese	AC	3	42	125/220
Badia Polesine	AC	3	42	125/220
Bagnacalvallo	AC	3	42	115/200
Bagnara Di Romagna	AC	3	42	150/260

NAME	TYPE	PHASE	CYCLE	VOLT
Bagnaria Arsa	AC	3	42	125/220
Bagnasco	AC	3	50	135/230
Bagni Della Porretta	AC	3	42	127/220
Bagni Della Porretta	AC	3	50	125/220
Bagno Di Romagna	AC	3	50	150/260
Bagnoli Di Sopra	AC	3	42	125/220
Bagnolo Cremasco	AC	3	42	150/250
Bagnolo Di Po	No electricity			
Bagnolo In Piano	AC	3	42	125/220
Bagnolo Mella	AC	3	50	125/220
Bagnolo Piemonte	AC	3	50	125/220
Bagnolo San Vito	AC	3	42	125/220
Bagoloino	DC	-	-	150
Baiardo	Not electrified 1931			
Bairo Torro	AC	3	50	125/220
Baiso	AC	3	42	125/220
Balangero	DC	-	-	220
Balangero	AC	3	50	125/220
Baldichieri	AC	3	50	125/220
Baldissero D'Alba	AC	3	50	125/220
Baldissero Torinese	AC	3	50	125/220
Ballabio	AC	3	42	125/220
Ballabio	AC	3	42	115/200
Balme	AC	3	50	150
Balmuccia	AC	3	50	125/220-250
Balocco	AC	3	42	130/220
Balzola	AC	3	50	125/220
Banche	No information			
Banchette	AC	3	50	125/220
Bannio Anzino	AC	3	42	140/250
Baone	No electricity			
Barbana D'Istria	No electricity			
Barbania	AC	3	50	125/220
Barbarano Vicentino	AC	3	42	125/220
Barbaresco	AC	3	50	125/220
Barbariga	AC	3	42	120
Barbariga	AC	3	42	125/220
Barbata	AC	3	50	145/250
Barbianello	AC	3	42	125/220
Barbiano	AC	3	50	125/220
Bard	AC	3	50	125/220
Bardia	AC	3	42	125/220
Bardello	AC	3	50	110/190-500
Bardineto	AC	3	50	150/260
Bardineto	AC	3	50	135/230
Bardolino	AC	3	50	125/220
Bardonecchia	AC	3	50	125/220
Bareggio	AC	3	42	160
Bareggio	AC	3	50	125/125-500
Barengo	AC	3	42	125/220
Barge	AC	3	50	125/220
Bariano	AC	3	50	145/250
Baricella	AC	3	42	125/220
Barlassina	AC	3	42	125
Barolo	AC	3	50	125/220

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NAME	TYPE	PHASE	CYCLE	VOLT
Barono	AC	3	50	125/220
Barzago	AC	3	42	125/220
Barzana	AC	3	50	150/260
Barzano'	AC	3	42	125/220
Barzio	AC	3	42	115/200
Basaluzzo	AC	3	42	125
Bascapo'	AC	3	42	125/220-530
Basiano	AC	3	42	145/250
Basiliano	AC	3	42	125/220
Basiliano	AC	3	50	115/200
Basiglio	AC	3	42	125/220
Bassano Bresciano	AC	3	42	125/220
Bassano Del Grappa	AC	3	42	125/220
Bassignana	AC	3	42	125
Bastia Mondovi'	AC	3	50	125/220
Bastida Del Dossi	AC	3	42	125/220
Bastida Pancarana	AC	3	42	125/220
Bastiglia	AC	3	42	125/220
Battaglia Terme	AC	3	42	125/220
Battuda	AC	3	42	125/220
Bavono	AC	3	42	125/220
Bazzano	AC	3	42	125/220
Bedoro Valcuvia	AC	3	50	110/190
Bedizzole	AC	3	50	120
Bedizzolo	AC	3	42	125/220
Bedollo	AC	3	50	125/220
Bedonia	AC	3	42	120/210
Bedulita	AC	3	50	220/220
Beinasco	AC	3	50	125/220
Beinette	DC	-	-	60
Belfiore	AC	3	42	125/220
Belgioioso	AC	3	42	125/220
Bellagio	AC	3	50	125
Bellano	AC	3	42	115/200
Bellinzago Lombardo	AC	3	42	145/250
Bellinzago Novarese	AC	3	50	125/125-500
Belluno	AC	3	42	125/220
Bellusco	AC	3	42	145/250
Belvedere Langhe	No electricity			
Belveglio	AC	3	50	125/220
Bema	AC	3	50	160/220
Bene Vagienna	AC	3	50	125/220
Bene Vagienna	AC	3	50	150/260
Benna	No electricity			
Bentivoglio	AC	3	42	125/220
Berbenno	AC	3	50	220/220
Berbenno	AC	3	42	160
Berbenno Di Valtellina	AC	3	50	110/190
Berceto	AC	3	42	115/200
Beregguardo	AC	3	42	125/220
Bergamasco	AC	3	50	125/220
Bergamo	AC	3	50	125/220
Bergamo	AC	3	50	150/260
Bergantino	AC	3	42	125/220

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NAME	TYPE	PHASE	CYCLE	VOLT
Bergogna	No electricity			
Berlingo	AC	3	42	125
Bernareggio	AC	3	42	125/220
Bernate Rosales	AC	3	50	125/220
Bernate Ticino	AC	3	42	125
Bernezzo	AC	3	50	125/220
Bertonico	AC	3	42	130/220
Berra	AC	3	42	125/220
Bertinoro	AC	3	50	150/260
Bertiolo	AC	3	42	125/220
Berzano Di San Pietro	No electricity			
Besana In Brianza	AC	3	42	125/220
Besate	AC	3	42	125/220
Beseno	AC	3	50	110
Besnate	AC	3	50	125-130/500
Besnate	DC	-	-	110
Besnate	AC	3	50	125/125-500
Besozzo	AC	3	50	125/125-500
Besozzo	AC	3	42	120/210
Besozzo	AC	3	50	110/190
Bettola	DC	-	-	140/280
Bettola	AC	3	42	145/250
Beura Cardezza	AC	3	42	125/220
Bevilacqua Boschi	AC	3	42	125/220
Bezzecca	AC	3	50	150
Biandrate	AC	3	42	125-220
Biandronno	AC	3	50	110/190
Bianze'	AC	3	50	125/220
Bianzone	AC	3	50	125/220
Biassono	AC	3	42	125/220
Bibbiano	AC	3	42	125/220
Bibiana	AC	3	50	125/220
Bicinicco	AC	3	42	125/220
Biella	AC	3	50	125-220/220-500
Biomnio	AC	3	42	125/220
Bigarello	AC	3	42	125/220
Binago	AC	3	50	125/125
Binasco	AC	3	42	160
Bioglio	No electricity			
Bionaz	No electricity			
Riorie	AC	3	42	125/220
Bi tagno	AC	3	50	125/220
Bi suschio	AC	3	50	110/190
Bi zzarono	AC	3	50	125/220
B loggio	AC	3	50	150
Blello	AC	3	42	160
Blessagno	AC	3	50	125/220
Blevio	AC	3	50	125/220
Boara Pisani	No electricity			
Bobbio	AC	3	42	125/220
Bobbio	DC	-	-	135
Bobbio Pellice	DC	-	-	120
Boca	AC	3	42	130
Boccioleto	AC	3	50	125/220

NAME	TYPE	PHASE	CYCLE	VOLT
Boffalora D'Adda	AC	3	42	140/250
Boffalora Sopra Ticino	AC	3	42	115/200
Boghanco	AC	3	42	125/220
Bogliuno	No electricity			
Bologna	AC	3	42	115/200
Bologna	DC	-	-	500
Bogogno	AC	3	42	125/220
Bolgare	AC	3	50	150/260
Bollate	AC	3	42	125/220
Bollate	AC	3	50	125/220
Bollengo	AC	3	50	125/220
Boltiere	AC	3	50	125/220
Bolzano	AC	3	46	120
Bolzano	AC	3	50	150
Bomporto	AC	3	42	125/220
Bonassola	AC	3	50	150/260
Bonate Di Sopra	AC	3	50	160
Bonate Di Sotto	AC	3	50	125/220
Bonavigo	AC	3	42	125/220
Bondono	AC	3	42	125/220
Bonemerse	AC	3	42	125/220
Bonvicino	No electricity			
Borca Di Cadore	AC	3	42	115/200
Bordano	No electricity			
Bordighera	AC	3	50	120
Bordighera	DC	-	-	600
Bordolano	AC	3	42	125/220
Boretto	AC	3	42	125/220
Borgaro Torinese	AC	3	50	125/220
Borghetto di Arroscia	AC	3	50	200/350
Borghetto Di Borbera	AC	3	50	150/260
Borghetto Lodigiano	AC	3	50	125/220
Borghetto Santo Spirito	AC	3	50	127/220
Borghi	No electricity			
Borgo	AC	3	50	150
Borgo	AC	3	42	110/190
Borgo	DC	-	-	220
Borgo D'Ale	AC	3	50	125/220
Borgoforte	AC	3	42	125/220
Borgofranco D'Ivrea	AC	3	50	125/220
Borgofranco Sul Po	AC	3	42	125
Borgo Lavezzaro	AC	3	50	150
Borgo Littorio	AC	3	42	125/220
Borgomale	No electricity			
Borgomanero	AC	3	42	125/220
Borgomaro	DC	-	-	220
Borgomasino	AC	3	50	125/220
Borgone Susa	AC	3	50	125/220
Borgonovo Val Tidone	AC	3	42	125/220
Borgo Panigale	AC	3	42	115/115-200
Borgo Priolo	AC	3	42	125/220
Borgoratto Alessandrino	AC	3	42	125
Borgoratto Mormorolo	No electricity			
Borgoricco	AC	3	42	125-220/220
Borgo San Dalmazzo	AC	3	50	125/220

NAME	TYPE	PHASE	CYCLE	VOLT
Borgo San Giacomo	AC	3	42 & 50	125/220
Borgo San Giacomo	AC	3	42	125/220
Borgo San Giacomo	AC	3	50	130
Borgo San Martino	AC	3	50	125/220
Borgo San Siro	DC	-	-	110
Borgosatollo	AC	3	42	125/220
Borgosesia	AC	3	50	125/220
Borgosesia	AC	3	42	145/250
Borgosesia	AC	3	50	125/220-250
Borgosesia	AC	3	50	240
Borgo Ticino	AC	3	42	180/270
Borgounito	DC	-	-	150
Borgo Val Di Taro	AC	3	42	200/350
Borgo Val Di Taro	AC	3	42	220
Borgo Vercelli	AC	3	42	125/220
Bormio	AC	3	42	125/220
Bormasco	AC	3	42	125/220
Borno	AC	3	42	125/220
Borriana	AC	3	50	125
Borso Del Grappa	AC	3	50	115/200
Borzonasca	No information			
Bosco Chiesanuova	AC	3	42	125
Bosco Chiesanuova	AC	3	42	125/220
Bosco Marengo	AC	3	42	127/220
Bosconero	AC	3	50	125/220
Bosisio Parini	AC	3	42	160
Bosnasco	No electricity			
Bossico	AC	3	42	250
Bossolasco	AC	3	50	125/220
Bottanuco	AC	3	42	160
Botticino	AC	3	42	125/220
Bovegno	AC	1	42	100
Bovegno	AC	3	42	125/220
Boves	AC	3	50	125/220
Bovezzo	AC	3	42	125/220
Bovisio	AC	3	42	115/200
Bovolenta	AC	3	42	125/220
Bovolone	AC	3	42	125/220
Bozzolo	AC	3	42	125/220
Bozzolo	AC	3	42	125/220
Bra'	AC	3	50	125/220
Bra'	AC	3	50	150/280-560
Bra'	AC	3	50	160/280-560
Bracca Di Costa Sorina	AC	3	42	160
Bracca Di Costa Sorina	AC	3	50	160
Braies	AC	3	50	220/380
Brandizzo	AC	3	50	125/220
Branzi	AC	3	50	160
Brebbia	AC	3	50	120/210
Breccia	AC	3	50	125
Breda Di Piave	AC	3	42	125/220
Bregano	AC	3	50	125/125-500
Bregano	AC	3	42	125/220
Breia	AC	3	42	160-500

NAME	TYPE	PHASE	CYCLE	VOLT
Brembate	AC	3	50	125/220
Brembate	AC	3	42	125/250
Brembilla	AC	3	42	160/160
Brembio	AC	3	50	125/220
Breno	AC	3	42	125/220
Brendola	AC	3	42	125/220
Brenna	AC	3	42	160
Brennero	DC	-	-	150
Brennero	DC	-	-	120
Brennero	DC	-	-	2 X 220
Breno	AC	3	42	125/220
Brentino Belluno	AC	3	42	125/220
Brentonico	AC	3	50	220
Brenzone	AC	3	50	125/220
Brescello	AC	3	42	125/220
Brescia	AC	3	42	125/220
Brescia	DC	-	-	2 X 125/250/600
Brescia	DC	-	-	1200
Bressana Bottarone	AC	3	42	125/220
Bressanone	AC	3	50	150
Bressanone	AC	3	50	220/380
Bressanvido	AC	3	42	125/220
Bresso	AC	3	42	120/210
Brez	AC	3	42	120
Brez	AC	3	42	220
Briaglia	AC	3	50	125/220
Bricherasio	DC	-	-	140
Bricherasio	AC	3	50	125/220
Briga	AC	3	42	130/220
Briga	AC	3	42	125/220
Briga Marittima	AC	3	50	110/190
Brignano Frascata	AC	3	50	125/220
Brignano Gera D'Adda	AC	3	50	150
Brinzio	AC	3	50	110/190-500
Briona	AC	3	42	130
Briosco	AC	3	42	125/220
Brisighella	AC	3	50	125/220
Brissago Valtravaglia	AC	3	50	110/190-500
Brivio	AC	3	42	125/220
Brogliano	AC	3	38	120/210
Broni	AC	3	42	125/220
Bronzolo	AC	1	50	120
Brossasco	AC	3	50	125
Brovello Carpugnino	AC	3	42	125/220
Brugherio	AC	3	42	115/200
Brugherio	AC	3	42	150/250
Brugnato	AC	3	42	110/190
Brugnera	AC	3	42	150/240
Bruino	AC	3	50	125/220
Bruino	AC	3	50	60
Brunano	AC	3	50	125
Brunate	AC	3	50	160
Brunate	DC	-	-	250
Brunico	AC	3	50	200
Brunico	AC	3	50	220/380

NAME	TYPE	PHASE	CYCLE	VOLT
Bruno	AC	3	50	125/220
Brusasco Cavagnolo	AC	3	50	125/220
Brusimpiano	AC	3	50	110/190-500
Brusnengo	AC	3	40	125
Brusnengo	AC	3	42	220
Brusson	DC	-	-	145
Bubbiano	AC	3	42	115
Bubbio	AC	3	50	110
Bubbio	AC	3	50	125/220
Buccinasco	AC	3	42	160
Buccio	AC	3	50	150/260
Budoia	AC	3	42	235
Budrio	AC	3	42	125/220
Buglio In Monte	AC	3	50	110
Buia	AC	3	42	125/220
Buie D'Istria	No electricity			
Bulciago	AC	3	42	160
Burago Di Molgora	AC	3	42	125/220
Buriasco	AC	3	50	125/220
Buronzo	AC	3	42	125/220
Busalla	AC	3	50	150/270
Busalla	AC	3	50	150/260
Busana	AC	3	50	125/220
Buscate	AC	3	50	125/220
Buscate	AC	3	50	125/125-500
Busnago	AC	3	42	145/250
Bussero	AC	3	42	145/250
Busseto	AC	3	42	140/250
Bussolengo	AC	3	42	125/220
Bussoleno	AC	3	50	125/220
Busto Arsizio	AC	3	50	125/125-500
Busto Garolfo	AC	3	50	125-220/125-220-500
Busto Garolfo	AC	3	50	125/125-500
Buttapietra	AC	3	42	125/220
Buttigliera Alta	AC	3	50	125/220
Buttigliera D'Asti	AC	3	50	125/220
Buttrio	AC	3	50	65/110
Cabiaglio	AC	3	50	110/190-500
Cabiate	AC	3	42	125/220
Ca' D'Andrea	AC	3	42	125/220
Cadogliano Viconago	AC	3	50	110/190-500
Cadolbosco Di Sopra	AC	3	42	125/220
Cadoo	AC	3	42	140/250
Cadonegho	AC	3	42	125/220
Cadorago	AC	3	50	125/220
Cadrezzato	AC	3	50	110/190
Cafasso	AC	3	50	125/220
Cagno	AC	3	50	125
Caines	AC	3	46	120
Caiolo	AC	3	42	125
Cairo Montenotte	AC	3	50	160/270

NAME	TYPE	PHASE	CYCLE	VOLT
Cairate	AC	3	50	125/220-500
Calalzo	AC	3	42	115/115-200
Calamandrana	AC	3	50	125/220
Calasca Castiglione	AC	3	42	145/250
Calcinato	AC	3	50	150
Calcinato	AC	3	42:50	125/220
Calcinato	DC	-	-	115
Calcio	AC	3	42	125/220
Caldaro	AC	3	50	146/250
Calderara Di Reno	AC	3	42	125/220
Cal Di Canale	No electricity			
Caldiero	AC	3	42	125
Caldogno	AC	3	42	125/220
Caldonzano	AC	3	50	220
Calendasco	AC	3	42	127/220
Calestano	AC	3	42	125/220
Calestano	AC	3	42	140/250
Calice Al Cornoviglio	AC	3	42	200/350
Calice Ligure	AC	3	50	125/220
Calizzano	AC	3	50	150/260
Calizzano	AC	3	50	135/230
Callabiana	AC	3	50	125/220
Calliano	AC	3	50	125/220
Calolziocorte	AC	3	42	125/220
Calosso	AC	3	50	125/220
Calvignaga	AC	3	42	130
Calvo	AC	3	42	125/220
Caltrano	AC	3	42	127/220
Calusco D'Adda	AC	3	42	160
Caluso	AC	3	50	125/220
Calvagese Della Riviera	AC	3	40	125/220
Calvatone	AC	3	42	125/220
Calvene	AC	3	42	127/220
Calvenzano	AC	3	50	145/250
Calvignano	AC	3	42	125/220
Calvignasco	AC	3	42	125/220
Calvisano	AC	3	42	125/220
Camagna	AC	3	50	125
Camairago	AC	3	42	125/220
Camandona	AC	3	42	145/250
Cambiago	AC	3	42	145/250
Cambiano	AC	3	50	125/220
Cambiasca	AC	3	42	125/220
Camburzano	AC	3	50	125
Camerana	AC	3	50	160/270
Camerana	AC	3	50	135/230
Camerano Casasco	AC	3	50	125/220
Camerata Cornello	AC	3	42	125/220
Camerì	AC	3	42	125/220
Cameri	AC	3	42	130/225-500
Camino	AC	3	42	125/220
Camisano	AC	3	42	150/250
Camisano Vicentino	AC	3	42	125/220
Camnago Volta	AC	3	50	125
Camogli	AC	3	50	127/220

NAME	TYPE	PHASE	CYCLES	VOLT
Campagna Lupia	AC	3	42	125/220
Campagnola Emilia	AC	3	42	125/220
Camparada	AC	3	42	130/220
Campoginc	AC	3	42	125/220
Camportogno	AC	3	50	200
Camportogno	AC	3	42	160
Campiglia Cervo	DC	-	-	170
Campiglia Cervo	AC	3	42	220
Campiglia Dei Berici	AC	3	42	125/220
Campiglione Fenile	AC	3	50	125
Campione	AC	3	50	120
Campo Ligure	AC	3	50	125/220
Campodarsego	AC	3	42	125/220
Campo Di Trens	AC	3	50	125/220
Campodolcino	AC	3	50	160
Campodoro	AC	3	42	125/220
Campoformido	AC	3	50	115/200
Campoformido	AC	3	42	125/220
Campogalliano	AC	3	42	125/220
Camporosone	AC	3	50	125/220
Campolongo Al Torrey	AC	3	42	125-220/220-380
Campolongo Maggiore	AC	3	42	125/220
Campolongo Maggiore	AC	3	42	220
Campolongo Sul Brenta	AC	3	42	125
Camponogara	AC	3	42	125/220
Camporosso	AC	3	50	125/220
Camposampiero	AC	3	42	125/220
Campo San Martino	AC	3	42	125/220
Camposanto	AC	3	42	125/220
Camposplnoso Albaredo	AC	3	42	125
Campo Tures	AC	3	50	130/210
Campo Tures	DC	-	-	220
Campovico	AC	3	50	110/190
Camugnano	No electricity			
Canale	AC	3	50	125/220
Canale D'Isonzo	AC	3	42	220
Canale San Bovo	AC	3	50	125/220
Canaro	No electricity			
Canazei	AC	3	50	220
Canda	AC	3	42	125/220
Candelo	AC	3	50	125/220
Candia Canavese	AC	3	50	125/220
Candia Lomellina	AC	3	42	125/220
Candiana	AC	3	42	125/220
Candiolo	AC	3	50	125/220
Canegrate	AC	3	50	125/220-500
Canegrate	AC	3	50	125/125-500
Canelli	AC	3	50	125/220
Caneva	AC	3	42	125/220
Canevino	No electricity			
Canfanaro	No electricity			
Canneto	AC	3	50	110/190
Canneto Pavese	No electricity			
Canneto Sull'Oglio	AC	3	42	125/220

NAME	TYPE	PHASE	CYCLE	VOLT
Cannobio	AC	3	42	125/220
Cannobio	DC	-	-	130
Cannobio	AC	3	50	135/230
Canonica D'Adda	AC	3	50	125/220
Cantello	AC	3	50	110/190
Cantoira	AC	3	50	125/220
Cantonale	AC	3	42	125/220
Cantu	AC	3	50	125/220
Cantu	AC	3	42	125/220
Canzo	AC	3	42	160
Caorle	AC	3	42	125/220
Caorso	AC	3	42	125/220
Capergnanica	AC	3	42	145/250
Capiago Intimiano	AC	3	50	125/220
Capizzone	AC	3	50	125/220
Capo Di Ponte	AC	3	42	125
Capodistria	DC	-	-	125/250
Caponago	AC	3	42	145/250
Caporetto	AC	3	50	125/220
Capovalle	AC	3	50	150
Cappella Cantone	AC	3	42	145/250
Cappella De' Picenardi	AC	3	42	125/220
Cappella Maggiore	AC	3	42	220
Capralba	AC	3	42	150/250
Caprezzo	AC	3	42	125/220
Capriana	AC	3	42	220
Capriano Azzano	AC	3	42	125/220
Capriata D'Orba	AC	3	50	220
Capriate San Gervasio	AC	3	42	145/250
Caprile	AC	3	42	145/250
Caprino Bergamasco	AC	3	50	150/260
Caprino Veronese	AC	3	42	125/220
Capriolo	AC	3	42	125/220
Capriva Di Cormons	AC	3	42	125-220/220-380
Caraglio	AC	3	50	125/220
Caramagna Piemonte	AC	3	50	125/220
Carate Brianza	AC	3	42	115/200
Carate Urio	AC	3	50	125
Caravaggio	AC	3	50	145/250
Caravate	AC	3	50	110/190-500
Caravate	AC	3	50	125/125-500
Carbonara Al Ticino	AC	3	42	125
Carbonara Di Po	AC	3	42	125/220
Carbonara Scrivia	AC	3	50	125
Carbonera	AC	3	42	125/220
Carceri	No electricity			
Cardano Al Campo	AC	3	50	125/125-500
Cardo'	AC	3	50	150/250
Carema	AC	3	50	125/220
Caremno	AC	3	42	125/220
Caresana	AC	3	42	125/220
Caresanablot	AC	3	42	125-220
Carezzano	AC	3	50	125/220
Carignano	AC	3	50	125/220
Carimate	AC	3	50	125/220

NAME	TYPE	PHASE	CYCLE	VOLT
Carisio	AC	3	42	125/220
Carlazzo	AC	3	50	125/220
Carlazzo	AC	3	50	125
Carmagnola	AC	3	50	125/220
Carnago	AC	3	50	125/220
Carnago	AC	3	50	125/125
Carnate	AC	3	42	125/220
Carobbio Degli Angeli	AC	3	50	150
Carona	AC	3	50	150/260
Caronno Ghiringhello	AC	3	50	125/220-500
Caronno Milanese	AC	3	50	125/220
Carmignano Di Brenta	AC	3	42	125/220
Carpaneto Piacentino	AC	3	42	130/220
Carponedolo	AC	3	42	125/220
Carponeto	AC	3	50	125/220
Carpi	AC	3	42	125/220
Carpiano	AC	3	42	125/220
Carpignano Sesia	AC	3	42	125/220
Carpineti	AC	3	50	125/220
Carrara San Giorgio	AC	3	42	125/220
Carrara Santo Stefano	AC	3	42	125/220
Carrega	No electricity			
Carrosio	AC	3	50	125/220
Carru'	AC	3	50	125/220
Cartigliano	AC	3	42	125/220
Cartosio	AC	3	50	125/220
Cartura	No electricity			
Carugate	AC	3	42	145/250
Carugo Arosio	AC	3	42	125/220
Carvico	AC	3	42	160
Casaco	No electricity			
Casalboltrame	AC	3	42	125/220
Casalborgone	AC	3	50	125/220
Casalbuttano E Uniti	AC	3	42	145/250
Casal Cermelli	AC	3	42	125/220
Casalecchio Di Reno	AC	3	42	125/220
Casale Corte Cerro	AC	3	42	125/220
Casale Cremasco	AC	3	42	145/250
Casale Di Scodosia	AC	3	42	125/220
Casaleggio Boiro	AC	3	50	220
Casaleggio Castellazzo	AC	3	42	125/220
Casaleone	AC	3	42	125/220
Casale Litta	AC	3	50	125/220-500
Casale Litta	AC	3	50	110/190
Casale Monferrato	AC	3	42	125/220
Casale Sul Silo	AC	3	42	125/220
Casaletto Ceredano	AC	3	42	145/250
Casaletto Di Sopra	AC	3	42	145/250
Casaletto Lodigiano	AC	3	42	125/220-530
Casaletto Vaprio	AC	3	42	145/250
Casal Fiumanese	AC	3	50	110-115
Casal Fiumanese	AC	3	50	110
Casalgrando	AC	3	42	125/220
Casalgrasso	AC	3	50	125

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NAME	TYPE	PHASE	CYCLE	VOLT
Casalino	AC	3	42	125/220
Casalmaggiore	AC	3	42	125/220
Casalmalocco	AC	3	42	125/220
Casalmorano	AC	3	42	145/250
Casalmoro	AC	3	42	125/220
Casalnocetto	AC	3	42	125/220
Casaloldo	AC	3	42	125/220
Casalpusterlengo	AC	3	42	125/220
Casalpusterlengo	AC	3	50	150
Casalromano	DC	-	-	160
Casalvolone	AC	3	42	125/220
Casalzuigno	AC	3	50	110/190-500
Casanova Elvo	AC	3	42	125/220
Casanova Lonati	AC	3	42	125
Casapinta	AC	3	42	125-220
Casargo	AC	3	42	115-200
Casarile	AC	3	42	160
Casarsa Della Delizia	AC	3	42	125/220
Casarza Ligure	AC	3	50	150/260
Casarza Ligure	AC	3	50	125/220
Casasco D'Intelvi	AC	3	50	125
Casatenuovo	AC	3	42	125/220
Casatisma	AC	3	42	125
Casazza	AC	3	42	125/220
Casciago	AC	3	50	110/190-500
Cascine San Giacomo	AC	3	42	145/250
Cascinette D'Ivrea	AC	3	50	150/260
Casei Gerola	AC	3	42	125/220
Caselette	AC	3	50	125/220
Caselette	AC	3	42	120
Casella	AC	3	50	150/260
Casello Landi	AC	3	42	125/220
Casello Lurani	AC	3	42	125/220
Caselle Torinese	AC	3	50	125/220
Casier	AC	3	42	125/220
Casina	AC	3	50	125/220
Casirate D'Adda	AC	3	42	145/250
Caslino D'Erba	AC	3	42	160
Casnate	AC	3	50	125/220
Casnigo	AC	3	50	110
Casnigo	AC	3	50	150/260
Casola Valsenio	AC	3	50	150
Casorate Primo	AC	3	42	125/220
Casorate Sempione	AC	3	50	125/125-500
Casorezzo	AC	3	42	125/220
Casorzo	AC	3	42	125/220
Casotto	AC	3	42	127/220
Caspoggio	AC	3	50	125
Cassacco	AC	3	42	125/220
Cassago Brianza	AC	3	42	125/220
Cassano D'Adda	AC	3	42	150/250
Cassano Magnago	AC	3	50	125/220-500
Cassano Spinola	AC	3	50	125/220
Cassano Valcuvia	AC	3	50	110/190

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NAME	TYPE	PHASE	CYCLE	VOLT
Cassiglio	DC	-	-	120
Cassina De' Pecchi	AC	3	42	145/250
Cassina Rizzardi	AC	3	50	125/220
Cassinasco	DC	-	-	110/220
Cassino	AC	3	50	125/220
Cassinolle	AC	3	50	125
Cassinotta Di Lugagnano	AC	3	42	125/220
Cassola	AC	3	42	125/220
Cassolnovo	AC	3	42	160
Castagnaro	AC	3	42	125/220
Castagneto Po	AC	3	50	125/220
Castegnero	AC	3	42	125/220
Castagnito	AC	3	50	160/280-560
Castagnole Lanze	AC	3	50	125/220
Castagnole Monferrato	AC	3	50	125/220
Castagnole Piemonte	AC	3	50	125/220
Castana	AC	3	42	125
Castana	AC	3	42	125/220
Castano Primo	AC	3	50	125/125-500
Casteggio	AC	3	42	150/260
Castegnato	AC	3	42	125/220
Castel 'Alfero	AC	3	50	125/220
Castelbaldo	AC	3	42	125/220
Castelbelforet	AC	3	42	125/220
Castelbello Ciardes	DC	-	-	220
Castel Boglione	AC	3	50	125/220
Castel Bolognese	AC	3	42	105
Castel Bolognese	AC	3	50	115/200
Castelcovati	AC	3	42	125
Castel D'Aiano	No electricity			
Castel D'Ario	AC	3	42	125/220
Castel D'Azzano	AC	3	42	125
Casteldelfino	DC	-	-	130
Casteldidone	AC	3	42	125/220
Castel Del Rio	AC	3	50	150
Castel Di Casio	AC	3	50	125
Castel Di Casio	AC	3	42	127/220
Castel Dobra	No electricity			
Castelfranco Dell'Emilia	AC	3	42	125/220
Castelfranco Veneto	AC	3	42	125/220
Castel Gabbiano	AC	3	42	150/250
Castel Goffredo	AC	3	42	125/220
Castelgonberto	AC	3	38	120/220
Castelguelfo Di Bologna	AC	3	42	125/220
Castelguglielmo	AC	3	42	125/210
Castel Ibblarizza	No electricity			
Castellamonte	AC	3	50	125/220
Castellamonte	AC	3	50	127/220
Castellanza	AC	3	50	125/125-500
Castellarano	AC	3	42	125/220
Castellarano	DC	-	-	110/220
Castellarquato	AC	3	42	125/220
Castellazzo Bormida	AC	3	42	125/220
Castelleone	AC	3	42	145/250

NAME	TYPE	PHASE	CYCLE	VOLT
Castelletto Cervo	AC	3	42	145/250
Castelletto D'Arro	No electricity			
Castelletto Di Brandizzo	AC	3	42	125
Castelletto D'Orba	AC	3	50	125/220
Castelletto Merli	AC	3	42	125/220
Castelletto Molina	AC	3	50	125/220
Castelletto Monforte	No electricity			
Castelletto Scarzoso	AC	3	42	125/220
Castelletto Sopra Ticino	AC	3	42	180/270
Castelletto Stura	AC	3	50	125/220
Castelletto Stura	DC	-	-	200
Castelletto Uzzone	No electricity			
Castelli Calepio	AC	3	42	125/220
Castelli Cusiani	AC	3	42	125/220
Castellinaldo	AC	3	50	160
Castellino Tanaro	No electricity			
Castello D'Agogna	AC	3	42	125/220
Castello D'Argile	AC	3	42	125/220
Castello Dell'Acqua	AC	3	50	125/220
Castello Di Annone	AC	3	50	125/220
Castello Di Brianza	AC	3	42	125/220
Castello Di Fiemme	AC	1 & 3	42	220
Castello Di Godego	AC	3	42	125/220
Castello Di Serravalle	No electricity			
Castello Lavazzo	AC	3	42	125/220
Castello Tesino	AC	3	50	150
Castellucchio	AC	3	50	125/220
Castellucchio	AC	3	42	125/220
Castelmagno	No electricity			
Castel Maggiore	AC	3	42	115/200
Castelmarte	AC	3	42	160
Castelmassa	AC	3	42	125/220
Castel Nella	AC	3	42	125/220
Castelnovetto	AC	3	42	125/220
Castelnovo Del Friuli	DC	-	-	75
Castelnovo Di Sotto	AC	3	42	125/220
Castelnuovo Bolbo	AC	3	50	125/220
Castelnuovo Bocca D'Adda	AC	3	42	130/220
Castelnuovo Bormida	AC	3	42	125/220
Castelnuovo Calcea	AC	3	50	125/220
Castelnuovo D'Istria	No electricity			
Castelnuovo di Magra	AC	3	42	200/350
Castelnuovo Di Verona	AC	3	42	135/240
Castelnuovo Don Bosco	AC	3	50	125/220
Castelnuovo Ne' Monti	AC	3	50	125/220
Castelnuovo Ne' Monti	DC	-	-	125
Castelnuovo Magra	AC	3	50	125/220
Castelnuovo Rangone	AC	3	42	125/220
Castelnuovo Scrivia	AC	3	42	125/220
Castelponzone	AC	3	42	125/220
Castel Rocchero	AC	3	50	125/220
Castelrotto	AC	3	50	150/260
Castelrotto	AC	3	50	150-220/260-380
Castelrotto	DC	-	-	150/300

NAME	TYPE	PHASE	CYCLE	VOLT
Castel Rozzone	AC	3	50	220
Castel San Giovanni	AC	3	42	130/220
Castel San Pietro Dell'Emilia	AC	3	42	115/200
Castelveccana	AC	3	50	110/190-500
Castelverde	AC	3	42	145/250
Castelvetro Di Modena	AC	3	42	125/125-220
Castelvetro Piacentino	AC	3	42	145/250
Castelvisconti	AC	3	42	145/250
Castel Vittorio	Not electrified 1931			
Castenaso	AC	3	45	115/220
Castenedolo	AC	3	42	125/220
Castiglione Chiavarese	AC	3	50	150/260
Castiglione D'Adda	AC	3	42	125/220
Castiglione Dei Popoli	AC	3	42	115/200
Castiglione Delle Stiviere	AC	3	42	125/220
Castiglione D'Intelvi	AC	3	50	125/220
Castiglione Falletto	AC	3	50	125/220
Castiglione Olona	AC	3	50	125/125-500
Castiglione Olona	AC	3	50	110/190
Castiglione Tinella	AC	3	50	125/220
Castino	AC	3	50	125/220
Castione Andevenno	DC	-	-	105
Castione Della Presolana	AC	3	50	150
Castions Di Strada	AC	3	42	125/220
Castiraga Vidardo	AC	3	42	125
Casto	AC	3	42	125/220
Casto	AC	3	42	220
Casto	AC	3	42	125
Castonno	AC	3	50	125/220-500
Castrezzato	AC	3	42	125/220
Castro	AC	3	42	125/220
Castrocaro Terra Del Sole	AC	3	50	150/260
Cattolica	AC	3	50	115/200
Cavacurta	AC	3	42	125/220
Cavaion Veronese	AC	3	42	125/220
Cavaion Veronese	AC	3	42	135/240
Cavaglia	AC	3	50	125/220
Cavaglià D'Agogna	AC	3	42	125/220
Cavaglio Spoccia	DC	-	-	160
Cavaglio Spoccia	DC	-	-	220
Cavaleso	AC	3	42	220
Cavallerleone	AC	3	50	150/220-560
Cavallermaggiore	AC	3	50	125/220
Cavallirio	AC	3	42	130/220
Cava Manara	AC	3	42	125/220
Cavareno	AC	3	42	120
Cavareno	AC	3	42	220
Cavaria Con Premezzo	AC	3	50	125/125-500
Cavarzere	AC	3	42	125/220
Cavaso Del Tomba	AC	3	50	115/200
Cavasso Nuovo	DC	-	-	75
Cavatore	AC	3	50	220
Cavazzocchorina	AC	3	42	125/220
Cavazzo Carnico	AC	3	42	115/200
Cave Maremmano	No electricity			

NAME	TYPE	PHASE	CYCLE	VOLT
Cavodine	AC	3	50	115
Cavonago D'Adda	AC	3	42	125/220
Cavonago Di Brianza	AC	3	42	145/250
Cavernago	AC	3	50	150/150-500
Cavezzo	AC	3	42	125/220
Cavour	AC	3	50	125/220
Cavriago	AC	3	42	125/220
Cavriana	AC	3	42	135/240
Cazzago Brabbia	AC	3	50	110/100-500
Cazzago San Martino	AC	3	42	125
Cazzano Di Tramigna	AC	3	42	125/220
Cedegolo	AC	3	42	125/220
Cedegolo	AC	3	42	125
Cedrasco	AC	3	42	125
Coggia	AC	3	42	125/220
Colla Dati	AC	3	42	125/220
Cellamonte	AC	3	42	50-125/220
Cellarengo	No electricity			
Cellatica	AC	3	42	125/220
Celle Enomondo	No electricity			
Celle Ligure	AC	3	50	127/220
Cellio	AC	3	42	125/220
Cembra	AC	3	50	220
Cenate D'Argon	AC	3	50	150
Cenate D'Argon	AC	3	50	150-500
Conconighe	AC	3	50	150/260
Cono	AC	3	50	150
Ceno	AC	3	50	160
Conesolli	AC	3	42	125/220
Centallo	AC	3	50	125/220
Cento	AC	3	42	125/220
Centrisola	AC	3	42	160
Contrisola	AC	3	50	125/220
Ceppo Morelli	DC	-	-	125
Cerano	AC	3	42	115/200
Cerano D'Intelvi	AC	3	50	125/125-220
Cercenasco	AC	3	50	125/220
Cercino	AC	3	42	125/125-500
Cercivento	AC	3	50	115/200
Cerea	AC	3	42	125/220
Ceregnano	AC	3	42	125/220
Ceres	AC	3	50	125/220
Ceresara	AC	3	42	125/220
Cereseto	AC	3	42	125/220
Ceresole D'Alba	AC	3	50	125/220
Ceresole Reale	DC	-	-	110
Cerete	AC	3	50	150
Cergnago	AC	3	42	125/220
Ceriale	AC	3	50	127/220
Ceriano Laghetto	AC	3	50	125/220
Ceriano Laghetto	AC	3	50	125/125-500
Cerignale	DC	-	-	220

NAME	TYPE	PHASE	CYCLE	VOLT
Cermenato	AC	3	50	125/220
Cermes	AC	3	50	110/190
Cermizza Goriziana	No electricity			
Cernobbio	AC	3	50	150-160
Cernobbio	AC	3	50	125/220
Cernobbio	AC	1	50	120
Cernusco Pontevecchia	AC	3	42	125/220
Cernusco Sul Naviglio	AC	3	42	150/250
Cerreto Castello	AC	3	50	150/260
Cerreto Grue	AC	3	50	125/220
Cerretto Lonellino	AC	3	42	125/220
Cerrina	AC	3	50	125/220
Cerriono	AC	3	50	125/220
Cerro Al Lambro	AC	3	42	125/220-530
Cerro Maggiore	AC	3	50	125/220
Cerro Maggiore	AC	3	50	125/125-500
Cerro Tanaro	AC	3	50	125/220
Certosa Di Pavia	AC	3	42	125/220
Cervarese Santa Croce	AC	3	42	125/220
Cervasca	AC	3	42	125/220
Cervatto	AC	3	50	150/150
Cervere	AC	3	50	162/280-560
Cervesina	AC	3	42	125/220
Cervia	AC	3	42	150/260
Cervignano	AC	3	42	130/220
Cervignano Del Friuli	AC	3	42	125/220
Cervignano Del Friuli	AC	3	50	150
Cervo	AC	3	50	220
Cesana Torinese	AC	3	50	125-220/220-500
Cesana Torinese	AC	3	50	125/220
Cesana Torinese	DC	-	-	110
Cesano Boscone	AC	3	42	160/55/160
Cesara	AC	3	42	130
Cesate	AC	3	50	127/220
Cesate	AC	3	50	125/125-500
Cesello Brianza	AC	3	42	160
Cesena	AC	3	50	150/260
Cesena	AC	3	50	125/220
Ceschatico	AC	3	50	150/260
Cesiomaggiore	AC	2	50	180/260
Cesiomaggiore	AC	3	50	125/220
Cessalto	AC	3	42	125/220
Cessole	DC	-	-	220
Ceto Cerveno	AC	3	42	125/220
Ceva	AC	3	50	135/230
Ceva	AC	3	42	125/220
Cevos	AC	3	50	150
Challant	AC	3	50	220-380
Chambave	AC	3	50	140/250
Chamois	No electricity			
Champorcher	DC	-	-	220

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NAME	TYPE	PHASE	CYCLE	VOLT
Chatillon	AC	3	50	140/250
"	AC	3	50	125/220
Cherasco	AC	3	50	125/220
"	AC	3	50	160/280-560
Cherso	AC	3	42	110
Chialamberto	AC	3	42	120
Chiampo	AC	3	42	125/220
Chianoc	DC	-	-	220
Chiapovano	No electricity			
Chiarano	AC	3	42	125/220
Chiari	AC	3	42	125/220
Chiavari	AC	3	50	125/220
"	AC	3	50	150/260
Chiavazza	AC	3	50	125/220
Chiavenna	AC	1 & 3	42	115/220
Chiaverano	AC	3	50	125/220
Chiavric	AC	3	50	125/220
Chiori	AC	3	50	125/220
Chiesa	AC	3	50	125/220
Chies D'Alpago	AC	3	42	220
Chieve	AC	3	42	145/250
Chignolo Po	AC	3	42	130/220
Chioggia	AC	3	42	125/220
Chiomonte	AC	1	42	125/220
"	AC	3	50	125/220
Chions	AC	3	42	125/220
Chiopris Viscone	AC	3	42	125/220
Chiuduno	AC	3	42	125/220
Chiuppano	AC	3	42	127/220
Chiuro	AC	3	40	110
"	AC	3	50	125/220
"	AC	3	40	110-125/190
Chiusa	AC	3	50	150
"	AC	3	50	220/220-380
Chiusa Di Pesio	AC	3	50	125/220
Chiusa Di San Michele	AC	3	42	200
"	AC	3	50	125/220
Chiusaforte	AC	3	42	125/220
Chiusano D'Asti	No electricity			
Chivasso	AC	3	50	125/220
Chiusavecchia	AC	3	50	125/220
Ciano D'Enza	AC	3	42	125/220
Cibiana	AC	3	42	115/200
Cicagna	AC	3	50	150/260
Cicognolo	AC	3	42	125/220
Cigliano	AC	3	50	125/220
Cigognola	No electricity			
Cigole	AC	3	42	125
Cilavegna	AC	3	50	125
Cimadolmo	AC	3	42	125/220
"	AC	3	42	220

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NAME	TYPE	PHASE	CYCLE	VOLT
Cimbergo Paspardo	AC	3	42	125/220
Cimolais	No electricity			
Cinaglio	AC	3	50	125/220
Cingia De' Botti	AC	3	42	125/220
Cinisello Balsamo	AC	3	42	125/220
Cino	AC	3	42	125/125-500
Cinto Caomaggiore	AC	3	42	125
Cinto Euganeo	AC	3	42	125/220
Cinzano	AC	3	50	125/220
Cipressa	Not electrified 1931			
Circhina	DC	-	-	220
Cirie'	AC	3	50	125/220
Cirimido	AC	3	50	125/220
Cisano Bergamasco	AC	3	50	150
Cisano sul Neva	DC	-	-	125
Cismon Del Grappa	AC	3	50	140/250
Ciserano	AC	3	50	150
Cislago	AC	3	50	125/500
Cislago	AC	3	50	500
Cisliano	AC	3	42	125/220
Cison Di Valmarino	AC	3	42	125/220
Cistorna D'Asti	AC	3	50	125/220
Cittadella	AC	3	42	125/220
Cittiglio	AC	3	50	110/190
Cittiglio	AC	3	50	152/125-500
Civate	AC	3	42	125/220
Civenna	AC	3	50	125/220
Civezzano	AC	3	50	220
Cividale Del Friuli	AC	3	45	115
Cividale Del Friuli	AC	3	42	220
Cividale Del Friuli		-	-	125/250
Cividate Al Piano	AC	3	50	150
Cividate Malegno	AC	3	42	125/220
Civiglio	AC	3	50	125/220
Civitella Di Romagna	AC	3	50	150/260
Civo	AC	3	50	110/190
Civo	AC	3	50	160
Claino Con Osteno	AC	3	50	125/220
Claut	AC	3	42	220
Clauzetto	DC	-	-	75/150
Clavesana	AC	3	50	125/220
Clavieres	AC	3	50	125/220
Cles	AC	3	42	120/210
Cles	DC	-	-	120
Clusone	AC	1	50	125
Clusone	AC	3	50	150
Clusone	DC	-	-	120/240
Coassolo Torinese	AC	3	?	240
Coazze	AC	3	50	125/220
Coccaglio	AC	3	42	125/220
Cocconato	AC	3	50	125/220
Codevigo	AC	3	42	125/220
Codevilla	AC	3	42	125/220
Codigoro	AC	3	42	125/220

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NOME	TIPO	FASI	CICLI	VOLT
Codogne'	AC	3	42	125/220
Codogno	AC	3	42	130/220
Codroipo	AC	3	42	125/220
Codroipo	AC	3	50	125
Corriola	AC	3	50	160/270
Cogliate	AC	3	50	125/220
Cogne	DC	-	-	115
Cogoleto	AC	3	50	127/220
Cogollo Del Cengio	AC	3	42	127/220
Coli	AC	3	42	125/220
Colico	AC	3	42	115/200
Collagna	AC	3	50	125/220
Collebeato	AC	3	42	125/220
Colle Brianza	AC	3	42	125/220
Collecchio	AC	3	42	145/250
Collegno	AC	3	50	125/220
Collio	AC	3	42	140/250
Colle Santa Lucia	AC	3	50	150
Colle Umberto	AC	3	42	125/220
Collerado Di Monte Albano	AC	3	42	125/220
Cologna Veneta	AC	3	42	125/220
Cologne	AC	3	42	125/220
Cologno Al Serio	AC	3	50	150/260
Cologno Al Colli	AC	3	42	125/220
Cologno Monzese	AC	3	42	145/250
Colorina	DC	-	-	150
Colorno	AC	3	42	125/220
Coltareno	AC	3	42	125/220-530
Colzate	AC	3	50	150
Combbio	AC	3	50	110/190
Comacchio	DC	-	-	150
Comazzo	AC	3	42	145/250
Comeglians	AC	3	50	115/200
Comelico Superiore	AC	3	50	115/200
Comeno	DC	-	-	110
Comerio	AC	3	50	110/190
Comezzano Cizzago	AC	3	42	125/220
Comignago	AC	3	42	125/220
Commessaggio	AC	3	42	125/220
Como	AC	3	50	145
Como	AC	3	50	125/220
Compiano	AC	3	42	200/350
Comun Nuovo	AC	3	50	150/260
Cona	AC	3	42	125/220
Concesio	AC	3	42	125/220
Concesio	AC	3	50	115/200
Conco	AC	3	42	127/220
Concordia Sagittaria	AC	3	42	125/220
Concordia Sulla Secchia	AC	3	42	125/220
Concorezzo	AC	3	42	120
Condino	AC	3	50	150
Condove	DC	-	-	120
Condove	AC	3	50	125/220
Conegliano	AC	3	42	125/220-500
Conegliano	AC	3	42	125/220

NAME	TYPE	PHASE	CYCLE	VOLT
Confienza	AC	3	42	125/220
Consolice	AC	3	42	125/220
Consolve	AC	3	42	125/220
Conzano	AC	3	42	125/220
Copiano	AC	3	42	125
Copiano	AC	3	42	220
Copparo	AC	3	42	125/220
Coquio Trevisago	AC	3	50	110/190-500
Coquio Trevisago	AC	3	50	120/220
Coquio Trevisago	AC	3	50	125/125-500
Corana	AC	3	42	125/220
Corbetta	AC	3	42	220
Cordenons	AC	3	42	125/220
Cordignano	AC	3	42	220
Cordignano	AC	3	42	125/220
Cordovado	AC	3	42	125
Coredo	AC	3	42	115/200
Coredo	AC	3	50	120
Coredo	AC	3	42	120
Coreglia Ligure	AC	3	50	150/260
Corio	AC	3	50	120/210
Cormano	AC	3	42	125
Cormons	AC	3	42	125-220/220-380
Corna	AC	3	50	150
Cornalo	AC	3	42	125/220
Cornaredo	AC	3	50	125/125-500
Cornate D'Adda	AC	3	42	145/250
Cornedo All'Isarco	AC	3	50	220
Cornedo Vicentino	AC	3	33	115/200
Cornedo Vicentino	AC	3	33	120/220
Cornegliano Laudense	AC	3	42	125/220
Cornegliano Laudense	AC	3	50	125/220
Corneliano D'Alba	AC	3	50	125/220
Cornigliano (Part of Genova)				
Corniglio	AC	3	42	120
Corniglio	AC	3	42	80
Corno Giovine	AC	3	42	130/220
Corno Vecchio	AC	3	42	130/220
Cornuda	AC	3	50	125/220
Correggio	AC	3	42	125/220
Correzzana	AC	3	42	125
Correzzola	AC	3	42	125/220
Corrido	AC	3	50	125
Corsico	AC	3	42	160
Cortaccia	AC	1	50	115/230
Cortanze	AC	3	50	125/220
Cortazzone	AC	3	50	125/220
Corte Brugnatella	AC	3	42	125/220
Corte De' Cortesi Con Cignone	AC	3	42	125/220
Corte De' Frati	AC	3	42	125/220
Corte Franca	AC	3	42	125/220
Cortemaggiore	AC	3	42	145/250
Cortenilia	AC	3	50	125/220
Corteno	AC	3	42	125

NAME	TYPE	PHASE	CYCLE	VOLT
Cortenova	AC	3	42	115/200
Cortenuova	AC	3	50	160/160-500
Corteolona	AC	3	42	125/220
Corte Palasio	AC	3	42	145/250
Cortiglione	AC	3	50	125/220
Cortile San Martino	AC	3	42	125/220
Cortina D'Ampezzo	AC	3	42	115/200
Cortina D'Ampezzo	AC	3	50	150
Corvino San Quirico	AC	3	42	125/220
Corzano	AC	3	42	125/220
Coseano	AC	3	50	125/220
Cosio di Arroscia	AC	3	50	125/220
Cosio Valtellino	AC	3	50	110/190
Cossana	No electricity			
Cossano Belbo	AC	3	50	125/220
Cossano Belbo	DC	-	-	80
Cossato	AC	3	50	125/220
Cossato	AC	3	42	250/450
Cossato	AC	3	42	145/250
Cossoria	AC	3	50	135/230
Cossila	AC	3	50	125/220
Cossogno	AC	3	42	125/220
Cossombrato	AC	3	50	125/220
Costabissara	AC	3	42	125/220
Costa Di Monticelli	AC	3	50	150/260-500
Costa De' Nobili	AC	3	42	125/220
Costa Di Rovigo	AC	3	42	125/220
Costa Masnaga	AC	3	42	160
Costanzana	AC	3	42	125/220
Costa Valle Imagna	AC	3	50	150
Costa Voscovato	No electricity			
Costa Volpino	AC	3	42	125/125-220
Costemano	AC	3	42	125/220
Castiglione D'Asti	AC	3	50	125/220
Castiglione Saluzzo	AC	3	50	125/220
Cotignola	AC	3	42	115/200
Courmayeur	AC	3	50	125/220
Courmayeur	DC	-	-	135
Covo	AC	3	50	145/250
Cazzo	AC	3	42	125/220
Cravanzana	No electricity			
Cravegna	AC	1	42	125/220
Cravegna	AC	3	42	125/220
Creazzo	AC	3	42	125/220
Creazzo	DC	-	-	125
Credaro	AC	3	42	125/220
Credera Rubbiano	DC	-	-	110/220
Credera Rubbiano	AC	3	42	160
Crema	AC	3	42	145/250
Cremenaga	AC	3	50	110/190
Cremona	AC	3	42	115/200
Cremona	AC	3	42	125
Cremia	AC	3	50	125/220

NAME	TYPE	PHASE	CYCLE	VOLT
Cremolino	AC	3	50	220
Cremona Ed Uniti	AC	3	42	125/220
Cremona Ed Uniti	AC	3	42	145/250
Cremona Ed Uniti	DC	-	-	120
Cremosano	AC	3	42	145/250
Cremosano	AC	3	42	125/220
Crenovizza	No electricity			
Crescentino	AC	3	50	125/220
Crespadoro	AC	3	42	125/220
Crespano Del Grappa	AC	3	42	125/220
Crespellano	AC	3	42	125/220
Crespiatica	AC	3	42	150/250
Crespino	AC	3	42	125/220
Cressa	AC	3	42	125/220
Crevacuore	AC	3	42	250/450
Crevacuore	AC	3	50	125/220-250
Crevalcore	AC	3	42	125/220
Crevola D'Ossola	AC	3	42	125/220
Crissolo	AC	3	50	125/220
Crocetta Del Montello	AC	3	50	125/220
Crodo	AC	3	42	125/220
Crosa	AC	3	42	150/260
Crosara	AC	3	42	125/220
Crosio Della Valle	AC	3	50	125/220
Crotta D'Adda	AC	3	42	145/250
Crova	AC	3	42	125/220
Cuasso Al Monte	AC	3	50	110/190-500
Cuccaro Monferrato	AC	3	42	125/220
Cucciago	AC	3	50	125/220
Cuceglio	AC	3	50	125/220
Cuggiono	AC	3	50	125/125-500
Cumiana	AC	3	50	125/220
Curnignano Sul Naviglio	AC	3	42	145/250
Cunardo	AC	3	50	110/190-500
Cunee	AC	3	50	125/220
Cuneo	AC	3	50	200/360
Cunico	AC	3	50	125/220
Cuorgne	AC	3	50	125/220-500
Cuorgne	AC	3	50	127/220
Cuorgne	AC	3	50	125/220
Cura Carpignano	AC	3	42	125/220
Curdomo	AC	3	50	150/260
Cureggio	AC	3	42	130/220
Curiglia Con Montoviasco	AC	3	50	110/190
Curino	AC	3	42	125/220
Curon Venosta	AC	3	46	120
Curon Venosta	AC	3	50	150
Curon Venosta	DC	-	-	220
Cursolo Orasso	DC	-	-	150-160
Curtarolo	AC	3	42	125
Curtarolo	AC	3	42	125/220
Curtatone	AC	3	42	125/220
Cusago	AC	3	42	160
Cusano Milanino	AC	3	42	125/220
Cusino	DC	-	-	120

NAME	TYPE	PHASE	CYCLE	VOLT
Cusio	AC	3	50	160
Cuvio	AC	3	50	110/190-500
Dalmine	AC	3	50	125/220
"	AC	3	50	125/125 500
Danta	AC	3	50	115
Darfo	AC	3	42	125/220
Daverio	AC	3	50	110/190-500
Dazio	AC	3	50	110/190
Dego	AC	3	50	160/270
"	AC	3	50	135/230
Delebio	AC	3	50	125/220
Dello	AC	3	42	130/230
Dello	AC	3	42	125/220
Demonte	AC	3	50	125/220
Denno	AC	3	42	110/150-220
Dernice	No electricity			
Derovere	AC	3	42	125/220
Dervio	AC	3	42	115/200
Desana	AC	3	42	125/220
Desenzano Del Garda	AC	3	42	125/220
Desio	AC	3	42	115/2--
Dezzo Di Scalve	AC	3	50	150/150
"	AC	3	50	150
Diano Castello	AC	3	50	127/220
Diano D'Alba	AC	3	50	125/220
Diano Marina	AC	3	50	127/220
Dignano	AC	3	50	65/125
Dignano D'Istria	DC	-	-	120
Dimaro	DC	-	-	220/2 X 220
"	DC	-	-	110
Divaccia San Canzinno	No electricity			
Divignano	AC	3	42	180/270
Dizzasco	AC	3	50	125/220
Dobbiaco	AC	3	50	150-220-380/150-220-380
Doberdo'Del Lago	No electricity			
Dogliani	AC	3	50	150/260
"	AC	3	50	125/220
Dogna	AC	3	42	125/220
Dolce'	AC	3	42	125/220
Dolceacqua	AC	3	42	150/260
"	AC	3	50	200/350
Dolcedo	AC	3	50	125/220
Dolegna Del Collio	No electricity			
Dolo	AC	3	42	220
Dolzago	AC	3	42	125/220
Domaso	AC	3	50	120
Domegge	AC	3	42	115/200

NAME	TYPE	PHASE	CYCLE	VOLT
Domodossola	AC	3	42	125/220
Donato	AC	3	50	125/220
Dongo	DC	-	-	150
Donnaz	AC	3	50	125/220
Dormalletto	AC	3	42	40-125/220
Dorno	AC	3	42	125/220
Dorzano	AC	3	50	125/220
Dosolo	AC	3	42	125/220
Dossena	AC	3	50	150/250
Douos	No electricity			
Dovadola	DC	-	-	150/300
"	AC	3	50	150/260
Dovera	AC	3	42	145/250
Dozza	AC	3	42	115/200
Drenchia	No electricity			
Dragoni	No electricity			
Drosano	AC	3	42	125/220-530
Drizzona	AC	3	42	125
Dro	AC	3	50	220
Dronero	AC	3	50	125/220
"	DC	-	-	120
Druent	AC	3	50	125/220
Druogno	AC	1	42	125/220
"	AC	3	42	125/220
Dubino	AC	3	42	125/125-500
Dueville	AC	3	42	125/220
Duino Aurisina	AC	3	42	125 220/380
Dumenza	AC	3	50	110/190
Dusino San Michele	AC	3	50	125/220
Duttogliano	No electricity			
Edolo	AC	3	42	125/220
"	AC	3	42	240
Egna	AC	1	50	120
Ello	AC	3	42	125/220
Elsane	No electricity			
Elva	No electricity			
Endine Gaiano	AC	3	42	125/220
Enego	AC	3	50	140/250
Enemonzo	AC	3	50	115/200
Entraque	AC	3	50	220
Envie	AC	3	50	125/220
Erba	AC	3	42	160
Erbe'	AC	3	42	125/220
Erbezzo	AC	3	42	125
Erbusco	AC	3	42	125/220
Erelle Cosina	No electricity			
Erto E Casso	AC	3	42	220
Erve	AC	3	42	125/220

NAME	TYPE	PHASE	CYCLE	VOLT
Esine	AC	3	42	125/220
Esino Lario	AC	3	42	115/200
Este	AC	3	42	125/220
"	DC	-	-	500
Etroubles	DC	-	-	110
Eupilio	AC	3	42	160
Exilles	DC	-	-	125
"	AC	3	50	125/220
Fabbrica Curone	No electricity			
Fabbrico	AC	3	42	125/220
Faedis	AC	3	42	115/200
Faedo Valtellino	AC	3	42	110
Faenza	AC	3	50	125/220
"	DC	-	-	125/250
Fagagna	AC	3	42	125/220
"	AC	3	50	65/125
Faggeto Lario	AC	3	50	125/220
Fagnano Olona	AC	3	50	125/500
"	AC	3	50	125/125-500
Falcade	AC	3	50	150/250
Falmenta	DC	-	-	220
Faloppio	AC	3	50	125/220
Falzes	AC	3	50	220
"	DC	-	-	110
Fanna	AC	3	42	125/220
"	DC	-	-	75/150
Fara Gera D'Adda	AC	3	50	125/220
Fara Novarese	AC	3	42	130/220
Fara Olivana Con Sola	AC	3	42	145/250
Fara Vicentino	AC	3	42	125/220
Farigliano	AC	3	50	150/260
"	AC	3	50	125/220
Farini D'Olmo	AC	3	42	140/250
Farra D'Alpago	AC	3	42	125/220
Farra Di Soligo	AC	3	42	125/220
Farra D'Isonzo	AC	3	42	125-220/220-380
Favria Oglianico	AC	3	50	125/220
Feisoglio	No electricity			
Feletto	AC	3	50	125/220
Felino	AC	3	42	125/220
"	AC	3	42	145/250
Felizzano	AC	3	42	125/220
Felonica	AC	3	42	125/220
Feltre	AC	3	50	125/220
"	AC	3	50	150/260
Fenegro'	AC	3	50	125/220
Fenestrelle	DC	-	-	150

NAME	TYPE	PHASE	CYCLE	VOLT
Fenestrelle	DC	-	-	220
"	DC	-	-	120
"	AC	3	50	125
Ferno	AC	3	50	125/125-500
"	AC	3	50	125/500
Ferrara	AC	3	42	125/220
"	DC	-	-	550
Ferrara Di Monte Baldo	AC	3	42	125
Ferera Cenisio	AC	3	50	250
Ferrera Di Varese	AC	3	50	110/190-500
Ferera Erbognone	AC	3	42	125/220
Ferrere	AC	3	50	125/220
Ferriere	AC	3	50	220/380
"	AC	3	42	150/260
Fiano	AC	3	50	125/220
Fianona	No electricity			
Ficarolo	AC	3	42	125/220
Fidenza	AC	3	42	125/220
Fie'	AC	3	50	220
Fiesco	AC	3	42	145/250
Fiesso D'Artico	AC	3	42	125/220
Fiesso Umbertiano	AC	3	42	125/220
Figino Serenza	AC	3	50	125/220
Figliaro	AC	3	50	125/220
Filighera	AC	3	42	125/220
Finale Ligure	AC	3	50	127/220
Finale Nell'Emilia	AC	3	42	125/220
Fino Mornasco	AC	3	50	125/220
Fiorano Canavese	AC	3	50	125/220
Fiorano Modenese	AC	3	42	125/220
Fiorenzuola D'Arda	AC	3	42	150/260
Fiumalbo	AC	3	50	120
Fiume	AC	3	42	105/190
Fiume Veneto	AC	3	42	125/220
Flaibano	AC	3	50	125/220
Flavon	AC	3	42	120
Fobello	AC	3	50	150
Fogliano Di Monfalcone	AC	3	42	125-220/220-380
Foglizzo	AC	3	50	125/220
Folgaria	AC	3	50	220
Follina	AC	3	42	125/220
Follo	AC	3	42	110/190
Fombio	AC	3	42	130/220
Fondo	AC	3	42	120
"	AC	3	42	220
"	AC	3	50	220
Fontana Del Conte	No electricity			

NAME	TYPE	PHASE	CYCLE	VOLT
Fontanafredda	AC	3	42	125/220
Fontanelice	AC	3	50	110/110
Fontanella	AC	3	42	145/250
Fontanellato	AC	3	42	145/250
Fontanelle	No electricity			
Fontaneto D'Agogna	AC	3	42	125/220
Fontanetto Da Po	AC	3	50	125/220
Fontanile	AC	3	50	125/220
Fontaniva	AC	3	42	125/220
"	DC	-	-	130
Fonte	AC	3	50	115/200
Fontevivo	AC	3	42	150/250
Fonzaso	AC	3	50	150/260
"	AC	3	42	125/220
Foppolo	DC	-	-	110
Forcola	AC	3	50	125/220
Foresto Sparso	No electricity			
Forgaria	DC	-	-	75/150
Forli'	AC	3	50	115/200
Forlimpopoli	AC	3	50	150/260
Formazza	AC	3	42	125/220
Formigara	AC	3	42	145/250
Formigine	AC	3	42	125/220
Formigliana	AC	3	42	125/220
Formignana	AC	3	42	125/220
Fornace	AC	3	50	125/220
Forni Avoltri	AC	3	50	115/200
Forni Di Sopra	AC	3	50	125/220
"	DC	-	-	130
"	DC	-	-	220
Forni Di Sotto	AC	3	50	125/220
Forni Di Val D'Astico	AC	3	42	127/220
Forno Canavese	AC	3	50	125/220-500
Forno Di Canale	AC	3	50	150/260
Forno Di Zoldo	AC	3	50	150
Fornovo Di San Giovanni	AC	3	50	145/250
Fornovo Di Taro	AC	3	42	145/250
Fortunago	No electricity			
Fossalta Di Piave	AC	3	42	125/220
Fossalta Di Portogruaro	AC	3	42	125/220
Fossano	AC	3	50	125/220
"	AC	3	50	160/280-560
Fossarmato	AC	3	42	125/220
Fosso'	AC	3	42	125/220
Foza	AC	3	42	125/220
Frabosa Soprana	AC	3	50	125/220
Frabosa Sottana	AC	3	50	125/220
Fraconalto	AC	3	50	125/220
Francavilla Bisio	AC	3	50	125/220
Frascaro	AC	3	42	125/220
Frascarolo	AC	3	42	125/220
Frassinelle Polesine	AC	3	42	120

NAME	TYPE	PHASE	CYCLE	VOLT
Frassinello Olivola	AC	3	50	125
"	AC	3	42	125
Frassinere	No electricity			
Frassineto Po	AC	3	42	125/220
Frassinetto	DC	-	-	220
Frassino	AC	3	50	125/220
Frassinoro	AC	3	42	125/220
Fratta Polesine	AC	3	42	125/220
Fregona	AC	3	42	125/220
Fresonara	AC	3	42	125/220
Frinco	AC	3	50	125/220
Frisanco	DC	-	-	110
Frossasco	AC	3	50	125/220
Frugarolo	AC	3	42	125/220
Fubine	AC	3	42	125/220
Fuipiano Valle Imagna	AC	3	50	160
Fumane	AC	3	42	125/220
Funes	AC	3	50	150
"	AC	3	50	220/380
"	DC	-	-	220
"	DC	-	-	110
Fusignano	AC	3	42	125/125-220
Fusine	AC	3	42	125
GabbionetaBinanuova	AC	3	42	125/220
Gabiano	AC	3	50	125/220
Gadesco Pieve Delmona	AC	3	42	125/220
"	AC	3	42	130/220
Gaggiano	AC	3	42	125/220
Gaggio Montano	AC	3	42	127/220
Gaglianico	AC	3	50	125/220
Gaiarine	AC	3	42	125/220
Gaiba	AC	3	42	125/220
Gaiola Moiola	AC	3	50	125/220
Gais	AC	3	50	220
"	AC	3	50	120/210
Galbiate	AC	3	42	125/220
Galeata	AC	3	50	150/260
Galgagnano	AC	3	42	125/220
Gallarate	AC	3	50	125/125-220-500
Galliate	AC	3	42	125/220
"	AC	3	42	225
Galliate Lombardo	AC	3	50	110/190-500
Galliavola	AC	3	42	125/220
Galliera	AC	3	42	125/220
Galliera Veneta	AC	3	42	125/220
Gallio	AC	3	42	127/220
Galzignano	AC	3	42	125/220
Gamalero	AC	3	42	125
Gambara	AC	3	42	125/220
"	DC	-	-	220
Gambarana	AC	3	42	125/220
Gambellara	AC	3	42	125/220
Gambettola	AC	3	50	150/260

NAME	TYPE	PHASE	CYCLE	VOLT
Gambolo'	AC	3	42	125/220
Gambugliano	AC	3	42	125/220
Gandino	AC	3	50	150/150-500
Gandosso	No electricity			
Garbagna	AC	3	50	150/260
Garbagna Novarese	AC	3	42	125/220
Garbagnate Milanese	AC	3	50	127/220
"	AC	3	50	125/125-500
Garbagnate Monastero	AC	3	42	160
Garda	AC	3	42	125/220
Gardone Riviera	AC	3	42	125/220
Gardone Val Trompia	AC	3	42	125/220
"	AC	3	42	200
Garessio	AC	3	50	125/220
"	AC	3	50	135/230
Gargallo	AC	3	42	125/220
Gargazzone	AC	3	46	120
Gargnano	AC	3	42	125/220
"	AC	3	50	150
Garlasco	AC	3	42	125/220
Garlate	AC	3	42	125/220
Garlenda	Not electrified 1931.			
Carzeno	AC	3	500	125/220
Garzigliana	AC	3	50	125/220
Cassino	AC	3	50	150/260
"	AC	3	50	125/220
Gattatico	AC	3	42	125/220
Gatteo	AC	3	50	115/200
Gattico	AC	3	42	125/220
Gattinara	AC	3	42	125/220
Gavardo	AC	3	40	125/220
"	AC	3	42	125/220
Gavello	AC	3	42	125/220
Gaverina	AC	3	42	125/220
Gavi	AC	3	42	125/220
Gavirate	AC	3	50	110/190-500
Gazoldo Degli Ippoliti	AC	3	42	125/220
Gazzada Schianno	AC	3	50	110/190-500
Gazzaniga	AC	3	51	115/200
Gazzo	AC	3	42	125/220
Gazzola	AC	3	42	125/220
Gazzuolo	AC	3	42	125/220
Gemmano	No electricity			
Gemona	AC	3	42	115/200
"	AC	3	50	110/200
Gemonio	AC	3	50	125/500
"	AC	3	50	125/125-500
"	AC	3	50	110/190-500
Genovolta	AC	3	42	145/250

NAME	TYPE	PHASE	CYCLE	VOLT
Genola	AC	3	50	125/220
Genova	AC	3	50	127/220
"	AC	3	50	125/220
"	DC	-	-	110-110-220/500
Genzone	AC	3	42	125/220
Gera Lario	DC	-	-	110/220
"	AC	3	50	125/220
Gerenzago	AC	3	42	125/220
Germagnano	AC	3	50	125/220-500
Gerola Alta	AC	3	50	220/220
Gerosa	AC	3	42	160
Gerre De' Caprioli	AC	3	42	125/220
Gessate	AC	3	42	145/250
Ghedi	AC	3	42	125/220
Ghemme	AC	3	42	125/220
Ghiffa	AC	3	50	110/190
Ghisalba	AC	3	50	160
Ghislarengo	AC	3	42	125/220
Giaglione	No electricity			
Giacciano Con Baruchella	AC	3	42	125/220
Gianico	AC	3	42	125/220
Giarole	AC	3	42	125/220
Giaveno	AC	3	50	125/220
Gifflenga	No electricity			
Gignese	AC	3	42	125/220
Giovo	AC	3	50	220
Gironico	AC	3	50	125/220
Giussago	AC	3	42	160
Giussano	AC	3	42	115/200
Glorenza	AC	3	50	150
Godega Di Sant'Urbano	AC	3	42	125
Godiasco	AC	3	42	125/220
Goito	AC	3	42	125/220
Golaslecca	AC	3	50	125
"	AC	3	50	125/125-500
Golese	AC	3	42	125/220
Golferenzo	No electricity			
Gombito	AC	3	42	145/250
Gonars	AC	3	42	115/200
Gonzaga	AC	3	42	125/220
Gordona	AC	1 & 3	42	115/200
Gorgo Al Monticano	AC	3	42	125/220
Gorgonzola	AC	3	42	145/250
Gorizia	AC	3	42	125-220/220-380
"	AC	3	42	220/380
"	AC	3	50	150/260
"	DC	-	-	550
Gorlago	AC	3	50	150/150
Gorla Maggiore	AC	3	50	125/125-500
Gorla Minore	AC	3	50	125/125-500
Gorle	AC	3	50	150
Gornate Olona	AC	3	50	125

NAME	TYPE	PHASE	CYCLE	VOLT
Gornate Olona	AC	3	50	5?0
Gorno	AC	3	50	125/220
Gorreto	AC	3	42	125
Gorzegno	AC	3	50	150/250
Gosaldo	AC	3	50	115
Gossolengo	AC	3	42	125/220
Gottolengo	AC	3	42	125/220
Govone	AC	3	50	160/280-560
Gozzano	AC	3	42	125/220
Gradisca D'Isonzo	AC	3	42	125-220/220
Grado	AC	3	42	125/220
Graffignana	AC	3	50	125/220
"	AC	3	42	125/220
Graglia	AC	3	50	125
Gragnano Trebbiense	AC	3	42	130/220
Grana	AC	3	50	125/220
Granaglione	DC	-	-	110
"	AC	3	50	115
"	AC	3	42	127/220
Granarolo Dell'Emilia	AC	3	42	115/200
Grancona	No electricity			
Grandate	AC	3	50	125/220
Grandola Ed Uniti	AC	3	50	115/200
Granozzo Con Monticello	AC	3	42	125/220
Grantorto	AC	3	42	125/220
Granze	AC	3	42	125/220
Grassobbio	AC	3	50	150
Gravedona	AC	3	50	125/220
Gravellona	AC	3	50	150
Gravellona Toce	AC	3	42	125/220
Gravere	AC	3	50	125/220
Grazzano Monferrato	AC	3	42	125/220
Greggio	AC	3	42	125/220
Gressoney	DC	-	-	110
"	AC	3	50	125/220
Crezzago	AC	3	42	145/250
Grezzana	AC	3	42	115
"	AC	3	42	125/220
"	AC	3	42	125
"	AC	3	42	115/200
Griante	AC	3	50	125/220
Grignasco	AC	3	50	135/240
"	AC	3	42	145/250
Grigno	AC	3	50	150
Grimacco	No electricity			
Grinzane Cavour	AC	3	50	125/220
Grisignana	No electricity			
Grisignano Di Zocco	AC	3	42	130/220
Grisolera	AC	3	42	125/220
Grisolera	AC	3	42	115/200
Grizzana	AC	3	42	115/200
"	AC	3	42	127/220
Grognardo	AC	3	50	125/220

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NAME	TYPE	PHASE	CYCLE	VOLT
Gromo	AC	3	50	150
"	AC	3	50	120
Grontardo	AC	3	42	125/220
Gropparello	AC	3	42	125/220
Groppello Cairoli	AC	3	42	115/200
Groscavallo	AC	3	50	120
"	AC	3	42	120
"	DC	-	-	120
Grosio	AC	3	42	125/220
Grosotto	AC	3	42	125/220
Gruaro	AC	3	42	125/220
Grugliasco	AC	3	50	125/220
Grumello Cremonese Ed Uniti	AC	3	42	145/250
Grumello Del Monte	AC	3	42	125/220
Grumes	AC	3	50	150
Grumolo Delle Abbadesse	AC	3	42	125/220
Gualtieri	AC	3	42	125/220
Guanzate	AC	3	50	125/220
Guardabosone	AC	3	42	125
Guardamiglio	AC	3	42	130/220
Guarda Veneta	AC	3	42	125/220
Guarene	AC	3	50	160/280-560
Guastalla	AC	3	42	125/220
Guazzora	AC	3	42	125/220
Gudo Visconti	AC	3	42	125/220
Guidizzolo	AC	3	42	125/220
Guiglia	AC	3	42	125/220
Gurro	AC	3	50	120
Gursago	AC	3	42	125/220
Gussola	AC	3	42	125/220
Idria	AC	3	50	220
"	DC	-	-	110/220
Idro	AC	3	42	125/220
Ierago Con Orago	AC	3	50	125
"	AC	3	50	125/125-500
Igliano	No electricity			
Illasi	AC	3	42	250
Imola	AC	3	42	150/260
Imperia	AC	3	50	127-220/220
"	AC	3	50	125-220/220
"	AC	3	50	120
Incisa Scapaccino	AC	3	50	125/220
Incudine	AC	3	42	125/220
Ingria	No electricity			
Intra	DC	-	-	110
"	AC	3	42	125/220
"	AC	3	42	125-180
Intragna	AC	3	42	125/220
"	AC	3	42	145/250
Introbio	AC	3	42	115/200
Introzzo	AC	3	42	125/220
Inverigo	AC	3	42	125/220
"	AC	3	42	160

CONFIDENTIAL

NAME	TYPE	PHASE	CYCLE	VOLT
Inverno	AC	3	42	160
"	AC	3	42	125
Inveruno	AC	3	50	125/220-500
Invorio	AC	3	42	125/220
Inzago	AC	3	42	145/250
Ioanniz	AC	3	50	150
Iolanda Di Savoia	AC	3	42	125/220
Iseo	AC	3	42	125/220
Isera	AC	3	50	220
Isolabona	AC	3	50	110
Isola Comacina	AC	3	50	125/220
Isola D'Asti	AC	3	50	125/220
Isola del Cantone	AC	3	50	150/260
Isola Della Scala	AC	3	42	125/220
Isola Di Fondra	DC	-	-	110
Isola D'Istria	No electricity			
Isola Dovarese	AC	3	42	125/220
Isola Rizza	AC	3	42	127/220
Isola Sant'Antonio	AC	3	42	125/220
Isola Vicentina	AC	3	42	125/220
Isorella	AC	3	42	125/220
Ispra	AC	3	50	110/190
Issiglio	AC	3	50	120/210
Issime	DC	-	-	100/200
Isso	AC	3	50	145/250
Issogne	AC	3	50	125/220
Istrana	AC	3	42	125/220
Ivrea	AC	3	50	125/220-500
"	AC	3	50	150/260-500
Izano	AC	3	42	145/250
Lacchiarella	AC	3	42	160
Laces	AC	3	50	120/210
"	DC	-	-	110-220
Ladinia	No electricity			
Laghi	AC	3	42	110/190
Laglio Brienno	AC	1	50	120
Lagnasco	AC	3	50	160/280-560
Lago Santo	AC	3	42	125/220
Lagundo	AC	3	46	120
Laigueglia	AC	3	50	127/220
Lainate	AC	3	50	125/125-500
Laino	AC	3	50	125
Lamion	AC	3	50	125/220
"	AC	3	50	127/220
Laives	AC	3	46	250
Lallio	AC	3	50	220/220
La Loggia	AC	3	50	125/220

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NAME	TYPE	PHASE	CYCLE	VOLT
La Magdeleine	No electricity			
Lambrugo	AC	3	42	120
Lama Mocogno	AC	3	42	125/220
Lamon	AC	3	42	125/220
La Morra	AC	3	50	125/220
Lamporo	AC	3	50	125/220
Lana	AC	3	50	110/190
Landiona	AC	3	42	130
Landriano	AC	3	42	125/220-530
Langhirano	AC	3	42	125/220
Langosco	AC	3	42	125/220
Lanischie	No electricity			
Lanzada	AC	3	50	125
Lanzo D'Intelvi	AC	3	50	125/220
Lanzo Torinese	AC	3	50	125/220
Lardirago	AC	3	42	125/220
Lasnigo	AC	3	42	160
Lastebasse	AC	3	42	127/220
La Thuile	DC	-	-	140
Latisana	AC	3	42	125/220
Lauco	AC	3	50	115
"	AC	3	50	115/200
Laurana	AC	3	50	220/380
Lauriano	AC	3	50	125/220
Lavagna	AC	3	50	125/220
Lavagno	AC	3	42	125
La Valle	DC	-	-	115
Lavarone	AC	3	50	220
Lavena Ponte Tresa	AC	3	50	110/190
Lavenc Mombello	AC	3	50	125/220-500
"	AC	3	50	110/190
Lavenone	AC	3	42	125/220
Lavis	AC	3	50	220
Lazise	AC	3	42	135/240
Lazzate	AC	3	42	145/260
Lecco	AC	3	42	125/220
"	AC	3	50	125/220
Leffe	AC	3	50	150/150-220-500
Leggiuno Sangiano	AC	3	50	110/190
"	AC	3	50	125/125-500
Legnago	AC	3	42	125/220
Legnano	AC	3	50	125
"	AC	3	50	500
"	AC	3	42	500
Lemie	AC	3	50	125/220
Lendinara	AC	3	42	125/220
Leno	AC	3	42	125/220
Lenta	AC	3	50	150/260
Lentate Sul Seveso	AC	3	42	160/260

NAME	TYPE	PHASE	CYCLE	VOLT
Lentiai	AC	3	50	150/260
Lequio Berria	AC	3	50	125/220
Larici	AC	3	42	200/350
Lerma	AC	3	50	125/220
Lesa Belgirate	AC	3	42	125/220
"	AC	3	42	145/250
Lesegno	AC	3	50	125/220
"	AC	3	50	135/230
Lesignano De' Bagni	AC	3	42	125/220
Lesmo	AC	3	42	115/200
Lessolo	AC	3	50	125/220
Lessona	AC	3	42	250/450
Lestizza	AC	3	42	125/220
Levanto	AC	3	50	150/260
Levate	AC	3	50	150
Levice	AC	3	50	150/250
Levico	AC	3	50	220
"	AC	3	50	150
Levone	AC	3	50	125/220
Leyni	AC	3	50	125/220
Lezzeno	AC	3	42	220
Lierna	AC	3	42	125
"	AC	3	42	115/220
Lieto Colle	AC	3	50	125/220
Lignana	AC	3	42	125/220
Ligonchio	AC	3	50	115/200
Ligosullo	AC	3	50	115/200
Lilliana	AC	3	50	125/220
Limana	AC	3	42	125/220
Limbiate	AC	3	42	120
Limena	AC	3	42	125/220
Limido Comasco	AC	3	50	125/220
Limone Piemonte	AC	3	50	125/220
Limone Sul Garda	AC	3	42	125/220
Linarolo	AC	3	42	125/220
Linate Al Lambro	AC	3	42	150/250
Lipomo	AC	3	50	125/220
Lirio	No electricity			
Liscate	AC	3	42	145/250
Lissone	AC	3	42	115/200
Livigno	AC	3	42	160
Livinallongo	AC	3	50	120
Livo	AC	3	50	125/220
Livorno Ferraris	AC	3	50	125/220
Livraga	AC	3	50	125/220
Lizzano In Belvedere	AC	3	50	125/220
"	DC	-	-	120
Loano	AC	3	50	127/220
Loazzolo	No electricity			

NAME	TYPE	PHASE	CYCLE	VOLT
Locana	DC	-	-	150
Locate Di Triulzia	AC	3	42	125/220-530
Locatello	AC	3	50	150
Lodi	AC	3	42	125/220
"	AC	3	42	130/220
"	AC	3	50	125/220
"	AC	3	42	145/250
Lodi Vecchio	AC	3	50	125/220
"	AC	3	42	125/220
Lodrino	AC	3	42	125/220
Lograto	AC	3	42	125/220
Loiano	AC	3	42	125
Lomagna	AC	3	42	125/220
Lomaso	AC	3	50	125/220
Lomazzo	AC	3	50	125/125-500
"	AC	3	50	125/220
Lombardore	AC	3	50	125/220
Lomello	AC	3	42	125/220
Lomnago	AC	3	50	110/190-500
Lonate Cempino	AC	3	50	125/125-220
"	AC	3	50	125/125-500
Lonate Pozzolo	AC	3	50	125
"	AC	3	50	125/125-500
Lonato	AC	3	42	125/220
Longare	AC	3	42	125/220
Longarone	AC	3	42	125/220
Longiano	AC	3	50	115/200
Longone Al Segrino	AC	3	42	160
Lonigo	AC	3	42	125/220
Loreggia	AC	3	42	125/220
Lorenzago	AC	3	42	115/200
Loreo	AC	3	42	125/220
Loria	AC	3	42	125/220
Lovere	AC	3	42	125/220
Lovero Valtellino	DC	-	-	220
Lozio	AC	3	42	110
Lozza	AC	3	50	110/190
Lozzo Atestino	AC	3	42	125/220
Lozzo Cadore	AC	3	42	115/200
Lozzolo	AC	3	42	125/220
Lu	AC	3	42	125/220
Lugagnano Val D'Arda	AC	3	42	125/220
Lugnacco	AC	3	50	120/210
Lugo	DC	-	-	160/320
Lugo Di Vicenza	AC	3	42	127/220
Luino	AC	3	50	110/190-500
"	AC	3	50	110/190
Luisago	AC	3	50	125/220
Lumarzo	AC	3	50	150/260
Lumezzane	AC	3	42	125/220
Lungavilla	AC	3	42	125/220

NAME	TYPE	PHASE	CYCLE	VOLT
Lurago D'Erba	AC	3	42	160
Lurago Marinone	AC	3	50	125/220
Lurano	AC	3	50	150/260
Lurate Caccivio	AC	3	50	125/220
Luserna	AC	3	42	127/220
Luserna San Giovanni	AC	3	50	125/220
"	AC	3	50	250
"	DC	-	-	220/440
Lusevera	AC	3	42	115/200
Lusia	No electricity			
Lusiana	AC	3	42	125/220
Lusiglie'	AC	3	50	125/220
Luson	DC	-	-	220/440
Lussingrande	AC	3	50	110/190
Lussinpiccolo	AC	3	50	110/190
Luzzara	AC	3	42	125/220
Maccagno Superiore	AC	3	50	110/190-500
"	AC	3	50	110/190
"	DC	-	-	500
Maccastorna	AC	3	42	125/220
Macello	AC	3	50	125/220
Macherio	AC	3	42	125/220
Macra	No electricity			
Macugnaga	AC	3	50	125/220
Madignano	AC	3	42	145/250
Madonna Del Sasso	-	42	130	
Madruzzo	AC	3	50	220
Magenta	AC	3	42	125/220
Maggiora	AC	3	42	125/220
Magherno	AC	3	42	125/220
Magliano Alfieri	AC	3	50	160/280-560
Magliano Alpi	AC	3	50	160/280-560
Magnacavallo	AC	3	42	125/220
Magnago	AC	3	50	125/220
"	AC	3	50	125/125-500
Magnano	AC	3	50	125/220
Magnano In Riviera	AC	3	50	115/200
Magre' All'Adige	AC	1	50	120
"	AC	1	50	115/230
Maiano	AC	3	42	125/220
Mairago	AC	3	42	125/220
Mairano	AC	3	42	125/220
Malabrnino	AC	3	42	125/220
Malalbergo	AC	3	42	125/220
Malcesine	AC	3	42	125/220
Male'	AC	1	60	125/125-400
"	DC	-	-	150
Maleo	AC	3	42	125/220
"	DC	-	-	125/250
Malesco	AC	1	42	125/220
"	AC	3	42	125/220

NAME	TYPE	PHASE	CYCLE	VOLT
Malgesso	AC	3	50	120/210
Malgrate	AC	3	42	125/220
Malles Venosta	AC	3	50	150
"	AC	3	50	120
"	DC	-	-	120
Malnate	AC	3	50	125/220
"	AC	3	50	125
Malo	AC	3	42	125/220
Malonno	AC	3	42	125/220
Malvicino	No electricity			
Mandello Del Lario	AC	3	42	115/200
Manerba	AC	3	42	125/220
Manerbio	AC	3	42	125/220
Mango	AC	3	50	125/220
Maniago	AC	3	42	125/220
Mansue'	AC	3	42	125/220
Manta	AC	3	50	125/220
Mantello	AC	3	42	125/125-500
Mantova	AC	3	42	125/220
Manzano	AC	3	42	125/220
Mapello	AC	3	50	150
Maranello	AC	3	42	125/220
Marano Di Valpolicella	AC	3	42	125/220
Marano Lagunare	AC	3	42	125/220
Marano Sul Panaro	AC	3	42	125/220
Marano Ticino	AC	3	42	180/270
"	AC	3	50	125/125-500
Marano Vicentino	AC	3	42	125/220
Maranzana	AC	3	50	125/220
Marcallo Con Casone	AC	3	50	125/220
"	AC	3	50	125/125-500
Marcaria	AC	3	50	125/220
Marcheno	AC	3	42	110
"	AC	3	42	125/220
Marcignago	AC	3	42	125/220
Marcon	AC	3	42	125/220
Marebbe	DC	-	-	220
Marene	AC	3	50	125/220
Mareno Di Piave	AC	3	42	125/220
Marentino	AC	3	50	125/220
Maresego	No electricity			
Margarita	AC	3	50	125/220
Margno	AC	3	42	115/200
Mariana Mantovana	AC	3	42	125/220
Mariano Comense	AC	3	42	140
Mariano Del Friuli	AC	3	42	125-220/220
Marlengo	AC	3	46	120
Marmirolo	AC	3	42	135/240
"	AC	3	42	125/220

NAME	TYPE	PHASE	CYCLE	VOLT
Marmora	No electricity			
Marnate	AC	3	50	125/125-500
Marne	AC	3	50	160
Marone	AC	3	42	125/220
Marostica	AC	3	42	125/220
"	DC	-	-	500
Marsaglia	No electricity			
Martellago	AC	3	42	125/220
Martello	No electricity			
Martignacco	AC	3	50	125/220
"	AC	3	42	125/220
Martignana Di Po	AC	3	42	125/220
Martinengo	AC	3	50	150
Martiniana	No electricity			
Marudo	AC	3	42	125
Marzabotto	DC	-	-	120
"	AC	3	42	127/220
Marzano	AC	42	125/220	
Marzio	AC	3	50	110
Masate	AC	3	42	145/250
Masciago Primo	AC	3	50	110/190
Maser	AC	3	50	115/200
Masera	AC	3	42	125/220
Maserada Sul Piave	AC	3	42	125/220
Masera' Di Padova	AC	3	42	125/220
Masi	AC	3	42	125/220
Masino	AC	3	50	125/220
Masio	AC	3	42	125/220
Maslianico	AC	1	50	120
Mason Vicentino	AC	3	42	125/220
Masone	AC	3	50	125/220
Massa Fiscaglia	AC	3	42	125/220
Massalengo	AC	3	50	125/220
"	AC	3	42	125/220
Massa Lombarda	AC	3	42	150/260
Massanzago	AC	3	42	220
Massazza	No electricity			
Massello	AC	3	50	127/220
Masserano	AC	3	42	125/220
Massino	AC	3	42	125/220
Mathi	AC	3	50	125/220
Matteria	No electricity			
Mattie	AC	3	50	125/220
Mattuglie	DC	-	-	110
Mazzano	AC	3	42	125/220
"	AC	3	50	120/210
Mazze'	AC	3	50	125/220
Mazzo Di Valtellina	AC	3	42	125/220
Meana Di Susa	3	50	125/220	
Meda	AC	3	42	115/200

NAME	TYPE	PHASE	CYCLE	VOLT
Mede	AC	3	42	125/220
Medesano	AC	3	42	145/250
Medicina	AC	3	42	125/220
Mediglia	AC	3	42	125/220-530
"	AC	3	42	150/250
Medo e	AC	3	42	125/220
Medo a	AC	3	42	125/220
Meduna Di Livenza	AC	3	42	125/220
Meduno	AC	3	42	150/250
Megliadino San Fidenzio	AC	3	42	125/220
Megliadino San Vitale	AC	3	42	125/220
Meina	AC	3	42	125/220
Mel	AC	3	50	150/250
Melara	AC	3	42	125/220
Melazzo	AC	3	50	125/220
Meldola	AC	3	50	150/260
"	AC	3	50	125/220
Melegnano	AC	3	42	125/220-530
Meleti	AC	3	42	130/220
Melle	AC	3	42	125/220
Mello	DC	-	-	160
Melma	AC	3	42	125/220
Meltina	AC	3	46	120
Melzo	AC	3	42	145/250
Menaggio	AC	3	50	125/220
Menarola	AC	3	42	125
Mendatica-Montegrosso	AC	3	50	125/220
Menconico	No electricity			
Meolo	AC	3	42	115/200
Merano	AC	3	46	120
Merate	AC	3	42	125/220
Mercallo	AC	3	50	110/190
"	AC	3	50	125/125-500
Mercato Saraceno	AC	3	50	125/220
Meretto Di Tomba	AC	3	50	125/220
"	AC	3	50	125
"	DC	-	-	220
Mergozzo	AC	3	42	125/220
Merlara	AC	3	42	125/220
Merlino	DC	-	-	115/130
Merna	AC	3	42	220
Merone	AC	3	42	160
Mese	AC	1 & 3	42	115/200
Mesero	AC	3	50	125/220
Mesola	AC	3	42	125/220
Mestrino	AC	3	42	220
Mezzago	AC	3	42	145/250
Mezzana	DC	-	-	115
Mezzana Bigli	AC	3	42	125/220

Mezzana Mortigliengo	AC	3	42	250/450
Mezzana Rabattone	AC	3	42	125/220
Mezzane Di Sotto	AC	3	42	125/220
Mezzanego	AC	3	50	125/220
Mezzani	AC	3	42	125/220
Mezzanino	AC	3	42	125/220
Mezzano Imer	AC	3	42	125/220
Mezzaselva	AC	3	50	150
Mezzenile	AC	3	50	125/220
Mezzocorona	AC	3	50	220
Mezzoldo	AC	3	50	140/250
Mezzolombardo	AC	3	50	220
Mezzomerico	AC	3	42	180/270
Miane	AC	3	42	125/220
Miasino	AC	3	42	130
Miazzina	AC	3	42	125/220
Migliarino	DC	-	-	260
"	AC	3	42	125/220
Milano	AC	3	42	160
"	AC	3	42	160-200/160/160
"	DC	-	-	550
"	AC	3	42	115/200
"	AC	3	42	145/250
"	AC	3	50	125/125-500
Millesimo	AC	3	50	150/270
Minerbe	AC	3	42	125/220
Minerbio	AC	3	42	125/220
Mioglia	AC	3	50	125/220
Mira	AC	3	42	220
Mirabello Ed Uniti Di Pavia	AC	3	42	125/220
Mirabello Monferrato	AC	3	42	125/220
Miradolo	AC	3	42	125/220
Mirandola	AC	3	42	125/220
Mirano	AC	3	42	125/220
Misano Di Gera D'Adda	AC	3	50	145/250
Misano In Villa Vittoria	AC	3	50	115/200
Misinto	AC	3	42	145/250
Missaglia	AC	3	42	125/220
Mizzole	AC	3	42	125
Mocchie	No electricity			
Moconesi	AC	3	50	125/220
Modena	AC	3	42	115-200/200
"	DC	-	-	500
Modigliana	DC	-	-	150/300
Moena	AC	1	42	220
"	AC	3	42	220
Moggio Udinese	AC	3	42	125/220
"	DC	-	-	120
Moglia	AC	3	42	125/220
Mogliano Veneto	AC	3	42	125/220

NAME	TYPE	PHASE	CYCLE	VOLT
Moimacco	DC	-	-	250
Molina Di Ledro	AC	3	50	220
"	DC	-	-	110
Molinella	AC	3	42	125/220
Molini di Triora	No information			
Molino Alzano	AC	3	50	125/220
"	AC	3	42	125/220
Mollia	DC	-	-	220
Molteno	AC	3	42	160
Moltrasio	AC	3	50	125/220
"	AC	1	50	120
Molvena	AC	3	42	125/220
Molveno	AC	3	42	110-150-220
Mombaruzzo	AC	3	50	125/220
Mombasiglio	No electricity			
Mombello Monferrato	AC	3	50	125/220
"	AC	3	42	125/220
Mombercelli	AC	3	50	125/220
Momo	AC	3	42	125/220
Mompantero	DC	-	-	150/300
"	AC	3	50	125/220
Monale	AC	3	50	125/220
Monastero Bormida	AC	3	50	125/220
Monastero Di Lanzo	No electricity			
Monastero Di Vasco	AC	3	50	125
Monasterolo Di Savigliano	AC	3	50	160/280-560
Monastier Di Treviso	AC	3	42	115/200
Moncalieri	AC	3	50	125/220-500
"	DC	-	-	550
"	AC	3	50	125/220
Moncalvo	AC	3	42	125/220
Moncestino	AC	3	50	125/220
Monchiero Novello	AC	3	50	150/2[illegible]0
"	AC	3	50	125/220
Monchio	DC	-	-	150
"	AC	3	42	200/350
"	AC	3	42	110/110
Moncrivello	AC	3	50	125/220
Moncucco Torinese	AC	3	50	125/220
Mondaino	AC	3	50	120/210
Mondovi'	AC	3	50	125/220
Moneglia	AC	3	50	150/260
Monesiglio	AC	3	50	135/230
Monfalcone	AC	3	42	125-220/220-380
Monfalcone	AC	3	42	220
Monforte D'Alba	AC	3	50	125/220
Mongardino	AC	3	50	125/220
Monghidoro	AC	3	50	150/260
Mongiardino Ligure	No electricity			
Mongiove	AC	3	50	150/250
"	DC	-	-	60

NAME	TYPE	PHASE	CYCLE	VOLT
Monguelfo	AC	3	50	220
Monguzzo	AC	3	42	160
Monselice	AC	3	42	125/220
Monta'	AC	3	50	125/220
Montabone	AC	3	50	125/220
Montafia	AC	3	50	125/220
Montagna	AC	3	42	220
Montagna In Valtellina	AC	3	50	125/220
Montagnana	AC	3	42	125/220
Montaldeo	AC	3	50	220
Montaldo Bormida	AC	3	50	125/220
Montaldo Di Mondovi'	AC	3	50	125/220
Montaldo Roero	AC	3	50	125/220
Montaldo Scarampi	AC	3	50	125/220
Montaldo Torinese	AC	3	50	125/220
Montalenghe	AC	3	50	125/220
Montalto Dora	AC	3	50	125/220
Montalto Ligure	DC	-	-	160
Montalto Pavese	AC	3	42	125/220
Montanaro	AC	3	50	125/220
Montanaso Lombardo	AC	3	42	125
Montanera	AC	3	50	125/220
Montano Lucino	AC	3	50	125/220
Montebello	AC	3	42	125/220
Montebello Vicentino	AC	3	42	125/220
Montebelluna	AC	3	42	125/220
Monte Bruno	DC	-	-	110
Montecalvo Versiggia	AC	3	42	125/220
Montecchia Di Crosara	AC	3	42	125/220
Montecchio Emilia	AC	3	42	125/220
Montecchio Maggiore	AC	3	42	125/220
Montecchio Precalcino	AC	3	42	125/220
Montechiaro D'Asti	AC	3	50	125/220
Montechiaro Denice	AC	3	50	125/220
Montechiarugolo	AC	3	42	125/220
Monte Cremasco	AC	3	42	150/250
Montecrestese	AC	3	42	125/220
Montecreto	AC	3	42	125/220
Monte Di Capodistria	No electricity			
Monte Di Malo	AC	3	42	125/220
Monte Di Malo	AC	3	38	120/210
Montefiore Conca	AC	3	50	125/220
Montefiorino	AC	3	42	125/220
Monteforte D'Alpone	AC	3	42	125/220
Montegalda	AC	3	42	125/220
Montegaldella	AC	3	42	125/220
Monte Gridolfo	AC	3	50	125/220
Montegrino Valtravaglia	AC	3	50	110/190-500
"	AC	3	50	110/190
Montegrosso D'Asti	AC	3	50	125/220
Monte Isola	AC	3	42	125/220
Montelupo Albese	AC	3	50	125/220

NAME	TYPE	PHASE	CYCLE	VOLT
Montemagno	AC	3	50	125/220
Montemale Di Cuneo	No electricity			
Monte Marenzo	AC	3	42	125/220
Montemarzino	AC	3	42	125/220
Montemezzo	No electricity			
Montenero D'Idria	No electricity			
Montereale Cellina	AC	3	42	125/220
Monterenzio	No electricity			
Monterosso al Mare	AC	3	42	200/350
Monterosso Grana	AC	3	50	150
"	DC	-	-	120
Monte San Pietro	No electricity			
Montescheno	AC	3	50	150
"	AC	3	42	145/250
Montescudo	AC	3	50	115/200
"	AC	3	50	125/220
Montese	AC	3	42	125/220
"	AC	3	42	115
Montesegale	AC	3	42	125/220
Montespino	AC	3	50	150
Monteu Roero	AC	3	50	125/220
Monteveglio	AC	3	42	125/220
Monteviale	AC	3	42	125/220
Montiano	AC	3	50	115/200
Monticelli D'Ongina	AC	3	42	145/250
Monticelli Pavese	AC	3	42	50-125/220
Monticello	AC	3	42	125/220
Monticello Alba	AC	3	50	125/220
Monticello Brusati	AC	3	42	125/220
Monticello Conte Otto	AC	3	42	125/220
Montichiari	AC	3	42 & 50	125/220
Montiglio	AC	3	50	125/220
Montodine	AC	3	42	145/250
Montoggio	AC	3	50	150/260
Montona	No electricity			
Montorfano	AC	3	50	125/220
Montorso Vicentino	AC	3	42	125/220
Montu' Beccaria	AC	3	42	125/220
Montu' Berchielli	No electricity			
Monvalle	AC	3	50	110/190-500
Monza	AC	3	42	115/200
"	DC	-	-	550
Monzambano	AC	3	42	135/240
Monzuno	AC	3	42	115/200
Morano Sul Po	AC	3	42	125/220
Morazzone	AC	3	50	110/190-500
Morbegno	AC	3	50	110/190
Morbello	No electricity			
Morciano Di Romagna	AC	3	50	120/210
Mordano	AC	3	42	150/260

NAME	TYPE	PHASE	CYCLE	VOLT
Morengo	AC	3	50	125/220
Moretta	AC	3	50	125/220
"	DC	-	-	120
Morfasso	No electricity			
Morgano	AC	3	42	125/220
Mori	AC	3	50	220
Moriago	AC	3	42	125/220
Morimondo	AC	3	42	125/220
Moriondo Torinese	AC	3	50	125/220
Mornago	AC	3	50	125/220-500
Mornese	AC	3	50	125/220
Mornico Al Serio	AC	3	50	150
Mornico Losana	AC	3	42	50-125/220
Morozzo	DC	-	-	220
Morsano Al Tagliamento	AC	3	42	125/220
Morsasco	AC	3	50	220
Mortara	AC	3	42	160
Mortegliano	AC	3	42	125/220
Morterone	No electricity			
Moruzzo	AC	3	42	115
Moscazzano	AC	3	42	145/250
Moso	AC	3	50	220/380
"	DC	-	-	220
Mossano	AC	3	42	125
Mosso Santa Maria	AC	3	50	150/250
Motta Baluffi	AC	3	42	125/220
Motta De'Conti	AC	3	42	125/220
Motta Di Livenza	AC	3	42	125/220
Mottalciata	AC	3	42	145/250
Motta Visconti	AC	3	42	125/220
Motteggiana	AC	3	42	125
Mozzanica	AC	3	50	145/250
Mozzecane	AC	3	42	125/220
Muggia	AC	3	42	125-220/220
"	AC	3	42	110
Muggio'	AC	3	42	115/200
Mulazzano	AC	3	42	125/220
Mura	AC	3	42	125/220
Murazzano	AC	3	50	125/220
Murello	AC	3	50	160/280-560
Murialdo	Not electrified 1931.			
Murisengo	AC	3	50	125/220
Muscoline	AC	3	40	125/220
Musile Di Piave	AC	3	42	125/220
Musso	AC	3	50	125/220
Mussolente	AC	3	42	125/220
Muzzana Del Turgnano	AC	3	42	125/220
Muzzano	AC	3	50	160/280

NAME	TYPE	PHASE	CYCLE	VOLT
Nalles	AC	3	46	120
Nanto	AC	3	42	125/220
Narzole	AC	3	50	125/220
Nasino	No information			
Naturno	AC	3	46	120
"	DC	-	-	110
Nave	AC	3	42	125/220
Naz Sciavez	AC	3	50	150
Ne	No information			
Nebbiuno	AC	3	42	140/250
"	AC	3	42	40-125/220
Negrar	AC	3	42	125/220
Neive	AC	3	50	125/220
Nembro	AC	3	50	150
Nervesa Della Battaglia	AC	3	42	125/220
Nerviano	AC	3	50	125/125-500
Nese	AC	3	50	160
Nesso	DC	-	-	160
Netro	AC	3	50	70/120
"	AC	3	50	125/220
Nevigno Degli Arduini	AC	3	42	125-220/220
Neviglie	AC	3	50	125/220
Nibbiano	AC	3	42	125/220
Nibbiola	AC	3	50	125/220
Nibionno	AC	3	42	130/220
Michelino	AC	3	50	125/220
Nicorvo	AC	3	50	125/220
Niella Belbo	No electricity			
Niella Tanaro	AC	3	50	125/220
Nimis	AC	3	42	125/220
Nizza Monferrato	AC	3	50	125/220
Noale	AC	3	42	125/220
Noceto	AC	3	42	144/250
Nogara	AC	3	42	125/220
Nogarole Rocca	AC	3	42	125/220
Nogarole Vicentino	AC	3	42	125/220
Nole	AC	3	50	125/220
Noli	AC	3	50	127/220
Nomi	AC	3	50	220
Nonantola	AC	3	42	125/220
None	AC	3	50	125/220
Nosate	AC	3	50	125/220
"	AC	3	50	125/125-500
Nossa	AC	3	50	150
"	AC	3	50	125
Novaledo	AC	3	50	150
Novalesa	AC	3	50	125
Nova Levante	AC	3	50	120/210
Nova Milanese	AC	3	42	125/220
Nova Ponente	AC	3	50	220/380
Novara	AC	3	42	125/220
	AC	3	50	125/125-500

NAME	TYPE	PHASE	CYCLE	VOLT
Novate Mezzola	AC	3	40	50-140/250
Novate Milanese	AC	3	42	125/220
Nove	AC	3	42	125/220
Novellara	AC	3	42	125/220
Noventa Di Piave	AC	3	42	125/220
Noventa Padovana	AC	3	42	125/220
Noventa Vicentina	AC	3	42	125/220
Novi Di Modena	AC	3	50	125/220
Noviglio	No electricity			
Novi Ligure	AC	3	42	125/220
"	AC	3	50	150/260
Nucetto	AC	3	50	135/230
Nus	AC	3	50	125/220
	AC	3	50	140/250
Nuvolento	AC	3	50	120/210
"	AC	3	40	125
Nuvolera	AC	3	40	125
Occhiobello	AC	3	42	125/220
Occhieppo Inferiore	AC	3	50	145/250-500
Occhieppo Superiore	AC	3	50	145/250
Occimiano	AC	3	42	125/220
Odalengo Grande	AC	3	50	125/220
Odalengo Piccolo	No electricity			
Oderzo	AC	3	42	125/220
Odolo	AC	3	42	125/220
Offanengo	AC	3	42	140/240
Offlaga	AC	3	42	125/220
Oggebbio	AC	3	50	110/190
Oggiona Con Santo Stefano	AC	3	50	125/125-500
Oggionno	AC	3	42	125/220
Olcenengo	AC	3	42	125/220
Oldenico	AC	3	42	125/220
Oleggio	AC	3	50	125/220-500
Olevano Di Lomellina	AC	3	42	125/220-500
Olgiate Calco	AC	3	42	125/220
Olgiate Comasco	AC	3	50	125/220
Olgiate Olona	AC	3	50	125/125-500
Olginate	AC	3	42	125/220
Oliveto Lario	AC	3	50	125
Ollomont	AC	3	50	125/220
Olmeneta	AC	3	42	145/250
Olmo Al Brembo	AC	3	50	160
Olmo Gentile	No electricity			
Oltre Il Colle	AC	3	50	140
Oltrona Di San Mamette	AC	3	50	125/220
Ome	AC	3	42	125/220
Omegna	AC	3	42	125/220
"	AC	3	42	150
"	AC	1	42	125/220
"	DC	-	-	150
Oneino	AC	3	50	130/220

NAME	TYPE	PHASE	CYCLE	VOLT
Oneta	AC	3	50	125
Opacchiasella	No electricity			
Opera	AC	3	42	125/220-530
Oppeano	AC	3	42	125/220
Ora	AC	1	50	120
"	AC	3	46	120
Orbassano	AC	3	50	125/220
Orgiano	AC	3	42	125/220
Orino Azzio	AC	3	50	110/190-500
Orio Al Serio	AC	3	50	150/260
Orio Canavese	AC	3	50	125/220
Orio Litta	AC	3	42	120/210
Ormea	AC	1	42	150
"	AC	3	50	135/230
Ormelle	AC	3	42	220
"	AC	3	42	125/220
Ornago	AC	3	42	145/250
Ornavasso	AC	3	42	125/220
"	AC	3	42	125
Ornica	AC	3	42	130
Orsago	AC	3	42	125/220
Orsara Bormida	AC	3	50	125/220
Orsenigo	AC	3	42	130
Orsera	DC	-	-	140
Orta San Giulio	AC	3	42	130
Ortisei	DC	-	-	150/300
"	AC	3	50	150-220/260-380
Ortonovo	No information			
Orzinuovi	AC	3	42	125/220
"	AC	3	50	125/220
"	AC	3	50	125
Orzivecchi	AC	3	42	125/220
"	AC	3	50	125
Osiglia	No information			
Osio Sopra	AC	3	50	120
Osio Sotto	AC	3	50	120
Osmate Lonbate	AC	3	50	110/190
Osnago	AC	3	42	125/220
Osoppo	AC	3	42	115
Ospedaletti	AC	3	50	127/220
Ospedaletto Euganeo	AC	3	42	125/220
Ospedaletto Lodigiano	AC	3	42	120/210
Ospitale	AC	3	42	125/220
Ospitaletto	AC	3	42	125/220
Ossago	AC	3	50	125/220
Ossana	DC	-	-	220/440
"	DC	-	-	220
Ossero	No electricity			
Ossimo	AC	3	42	125/220
Ossona	AC	3	42	115/200

NAME	TYPE	PHASE	CYCLE	VOLT
Ostellato	AC	3	42	125/220
Ostiano	AC	3	42	125/220
Ostiglia	AC	3	42	125/220
Ottiglio	AC	3	42	125/220
Ottobiano	AC	3	42	125/220
Ottone	DC	-	-	115/230
Oulx	AC	3	50	125/220
Ovada	AC	3	50	125/220
Ovaro	AC	3	50	115/200
Oviglio	AC	3	42	220
Oyace	No electricity			
Ozzano Dell'Emilia	AC	3	42	115/200
Ozzano Monferrato	AC	3	42	125/220
Ozzero	AC	3	42	125/220
Padenghe	AC	3	42	125/220
Paderno Del Grappa	AC	3	50	115/200
Paderno Dugnano	AC	3	42	65/115/200
Paderno Franciacorta	AC	3	42	125/220
Paderno Ossolaro	AC	3	42	145/250
Padova	AC	3	42	125/220
"	DC	-	-	120-240
Paesana	AC	3	50	125/220
Paese	AC	3	42	125/220
Pagazzano	AC	3	50	150/260
Pagno	No electricity			
Pagnona	AC	3	42	115/200
Paladina	AC	3	50	125-150-220/ 150-220
Palanzano	AC	3	42	110
"	AC	3	42	125/220
Palazzago	AC	3	50	125/220
Palazzolo Della Stella	AC	3	42	115/200
Palazzolo Sull'Oglio	AC	3	42	125/220
Palazzolo Vercellese	AC	3	50	125/220
Palazzo Pignano	AC	3	42	145/250
Palazzo Piverone	AC	3	50	125/220
Palestro	AC	3	42	125/220
Pallanza	AC	3	42	125/220
"	AC	3	42	125/180
"	DC	-	-	550
Palmanova	AC	3	42	125/220
Palosco	AC	3	50	150/260
Palvareto	AC	3	42	125/220
Paluzza	AC	3	50	115/200
Pamparato	DC	-	-	150
Pancalieri	AC	3	50	125/220
Pancarana	AC	3	42	125/220
Pandino	AC	3	42	145/250
Pannone	AC	3	50	220
Pantigliate	AC	3	42	145/250

NAME	TYPE	PHASE	CYCLE	VOLT
Papozze	AC	3	42	125/220
Parabiago	AC	3	50	125/125-500
Paratico	AC	3	42	125/220
Parcines	AC	3	50	220
Parenzo	No electricity			
Pareto	AC	3	50	125/220
Parlasco	AC	3	42	115/200
Parma	DC	-	-	125&150/250 & 300
"	AC	3	42	125-220/220
"	AC	3	42	125/220 & 450
"	AC	1	25	400
Parodi Ligure	AC	3	50	220
Parona	AC	3	50	125/220
Parre	AC	3	50	160/290
"	AC	3	50	125/220
Paruzzaro	AC	3	42	125
"	AC	3	42	125/220
Parzanica	No electricity			
Pasian Di Prato	AC	3	42	115/200
Pasiano	AC	3	42	125/220
Passerano Marmorito	AC	3	50	125/220
Passirano	AC	3	42	125/220
Pastrengo	AC	3	42	135/240
Pasturana	AC	3	50	125
Pasturo	AC	3	42	115/200
Paularo	AC	3	42	125/220
Paullo	AC	3	42	145/250
Pavarolo	AC	3	50	125/220
Pavia	AC	3	42	125/220-440-550
"	DC	-	-	550
"	AC	3	42	125/220
Pavia Di Udine	AC	3	42	125/220
Pavone Canavese	AC	3	50	125/220
Pavone Del Mella	AC	3	42	125/220
Pavullo Nel Frignano	AC	3	42	125/220
Pecetto	AC	3	50	125/220
Pecetto Di Valenza	AC	3	42	125/220
Pecorara	AC	3	42	125/220
Pedanea	AC	3	50	125/220
Pedavena	AC	3	50	150/260
"	AC	3	42	125/220
"	AC	3	50	125/220
Pedemonte	AC	3	42	127/220
Pedergnaga Oriano	AC	3	50	130/230
Pederobba	AC	3	50	125/220
Pedesina	AC	3	50	220
Pedrengo	AC	3	42	150

NAME	TYPE	PHASE	CYCLE	VOLT
Pegognaga	AC	3	42	125/220
Peia	AC	3	50	150
Peio	AC	3	50	220
"	DC	-	-	220
Pellegrino Parmense	AC	3	42	125/220
Pellio Intelvi	AC	3	50	125
Penango	AC	3	42	125/220
Perarolo	AC	3	42	115/200
Perca	AC	3	50	120-220
Pergine Valsugana	AC	3	50	220
"	AC	3	50	125/220
"	AC	3	50	220
Perinaldo	Not electrified 1931.			
Perno	AC	3	50	125/220
Pernumia	AC	3	42	125/220
Pero	AC	3	50	125/125-220
Perosa Argentina	DC	-	-	120
"	AC	3	50	125/220
Perrero	AC	3	50	125/220
"	AC	3	50	127/220
"	DC	-	-	120
Persico Dosimo	AC	3	42	125/220
Pertengo	AC	3	42	125/220
Pertica Alta	AC	3	42	125/220
"	AC	3	42	110
Pertica Bassa	AC	3	42	125/220
Pescantina	AC	3	42	135/240
Pescarolo Ed Uniti	AC	3	42	125/220
Peschiera Borromeo	AC	3	42	145/250
Peschiera Del Garda	AC	3	42	135/240
Pessano	AC	3	42	145/250
Pessina Cremonese	AC	3	42	125/220
Pettenasco	AC	3	42	130
Pettinengo	AC	3	50	125/220-500
Pettorazza Grimani	No electricity			
Peveragno	AC	3	50	125/220
Pezzana	AC	3	42	125/220
Pezzaze	AC	3	42	115/200
Pezzolo Valle Uzzonem	No electricity			
Piacenza	AC	3	42	125/220
Piacenza D'Adige	AC	3	42	125/220
Piadena	AC	3	42	125/220
Pian D'Artogne	AC	3	42	125/220
Pianello Del Lario	AC	3	50	125/220
Pianello Val Tidone	AC	3	42	125/220
Pianezza	AC	3	50	125/220-500
Pianezze	AC	3	42	125/220
Pianfei	AC	3	50	125/220
Pianico	AC	3	42	125

NAME	TYPE	PHASE	CYCLE	VOLT
Pianiga	AC	3	42	125/220
Pianoro	AC	3	42	115/115-200
"	DC	-	-	120
Piantedo	AC	3	50	125/125-220
Piasco	AC	3	50	150/150-260
Piateda	AC	3	50	110
Piatto	AC	3	50	125
Piazzatorre	AC	3	42	125
Piazzola Sul Brenta	AC	3	42	125/220
Piazzolo	AC	3	50	160
Piea	AC	3	50	125/220
Piedicavallo	DC	-	-	140
Piedimulera	AC	3	42	125/220
"	AC	3	42	125
Pieranica	AC	1	50	110
Pietrabruna	Not electrified 1931.			
Pietra De'Giorgi	AC	3	42	125/220
Pietra Ligure	AC	3	50	127/220
Pietra Marazzi	AC	3	42	125/220
Pieve Albignola	AC	3	42	125/220
Pieve D'Alpago	AC	3	42	125
Pieve Del Cairo	AC	3	42	125/220
Pieve Di Bono	AC	3	50	150
Pieve Di Cadore	AC	3	42	115/200
Pieve Di Cento	AC	3	42	125/220
Pieve Di Coriano	No electricity			
Pieve D'Olmi	AC	3	42	115/250
Pieve Di Soligo	AC	3	42	125/220
Pieve di Teco	AC	3	50	110/190
"	AC	3	50	127/220
Pieve Emanuele	AC	3	42	125/220-530
Pieve Fissiraga	AC	3	50	125/220
Pievepelago	AC	3	50	120
Pieve Porto Morone	AC	3	42	125/220
Pieve San Giacomo	AC	3	42	125/220
Pieve Tesino	AC	3	50	150
Pieve Vergonte	AC	3	42	125/220
"	AC	3	42	115/250
Pigna	AC	3	50	110
"	AC	3	50	125/220
Pigra	AC	3	50	125/220
Pila	AC	3	42	160
Pinarolo Po	AC	3	42	125/220
Pinasca	AC	3	50	125/220
Pincara	No electricity			

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NAME	TYPE	PHASE	CYCLE	VOLT
Pinerolo	AC	3	50	125/220
"	DC	-	-	125
Pinguente	No electricity			
Pinzano Al Tagliamento	DC	-	-	75/150
Pinzola	AC	1	42	150
Pino Sulla Sponda Del Lago Maggiore	AC	3	50	110
Pino Torinese	AC	3	50	125/220
Piobesi Torinese	AC	3	50	125/220
Piode	AC	3	42	160
Pioltello	AC	3	42	145/250
Piombino Dese	AC	3	42	125/220
Piossasco	AC	3	50	125/220
Piova'	AC	3	50	125/220
Piove Di Sacco	AC	3	42	125/220
Piovene	AC	3	42	127/220
Piovera	AC	3	42	125/220
Piozzano	AC	3	42	125/220
Pionzo	AC	3	50	150/260
Pirano	DC	-	-	250/500/450
Pisano	AC	3	42	40-125/220
Piscina	AC	3	50	125/220
Pisino	No electricity			
Pisogne	AC	3	42	125/220
Pistolesa	AC	3	50	120
Piubega	AC	3	42	125/220
Piuro	AC	3	42	150
Pizzale	AC	3	42	125/220
Pizzighettone	AC	3	42	145/250
Platischis	No electricity			
Plaus	AC	3	46	120
Plesio	DC	-	-	110
Plezzo	AC	3	50	220
Poccnia	AC	3	42	125/220
Podenzano	AC	3	42	130/220
Poggio Berni	No electricity			
Poggio Renatico	AC	3	42	125/220
Poggio Rusco	AC	3	42	125/220
Poggiridenti	AC	3	42	125/220
Pogliano Milanese	AC	3	50	125/125-500
Pognana	AC	3	50	125
Pognano	AC	3	50	125/220-250
Poiana Maggiore	AC	3	42	125/220
Poirino	AC	3	50	125/220
Pola	AC	2	42	220/380
"	DC	-	-	220/440/550
Polaveno	AC	3	42	125/220
Polcenigo	AC	3	42	235

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NAME	TYPE	PHASE	CYCLE	VOLT
Polcenigo	DC	-	-	150
Polesella	AC	3	42	125/220
Polesine Parmense	AC	3	42	125/220
Polinago	AC	3	42	125
Pollone	AC	3	50	150/260
Polonghera	AC	3	50	125
Polonghera	AC	3	50	125/220
Polpenazze	AC	3	42	125/220
Polverara	AC	3	42	125/220
Pomaro Monferrato	AC	3	42	220
Pomarolo	AC	3	50	220
Pombia	AC	3	42	180/270
Pompiano	AC	3	50	125/220
Pomponesco	AC	3	42	125/220
Poncarale Flero	AC	3	42	125
"	AC	3	42	125/220
Ponderano	AC	3	50	125/220-500
Ponna	AC	3	50	125/220
Ponso	No electricity			
Pont Bozet	No electricity			
Pont Canavese	AC	3	42	150
Ponte All'Isarco	DC	-	-	150
Pontebba	AC	3	42	125/220
Pontecchio Polesine	AC	3	42	125/220
Pontechianale	DC	-	-	135
Pontecurone	AC	3	42	125/220
Pontedassio	AC	3	50	127/220
Ponte Dell'Olio	AC	3	42	130/220
Ponte Di Legno	AC	3	42	125
Ponte Di Piave	AC	3	42	220
"	AC	3	42	125/220
Ponte In Valtellina	AC	3	42	110-125/190
Pontelongo	AC	3	42	125/220
Ponte Lambro	AC	3	42	190
Ponte Nell'Alpi	AC	3	42	125/220
Ponte Nizza	AC	3	42	125
"	AC	3	42	125/220
Pontenure	AC	3	42	145/250
Ponteranica	AC	3	50	150
Ponte San Martino	DC	-	-	110
"	AC	3	50	150/260
Ponte San Nicolo'	AC	3	42	130/220
Ponte San Pietro	AC	3	50	160/160-500
Pontestura	AC	3	42	125/220
"	AC	3	42	125
Pontevico	AC	3	42	125/220
"	DC	-	-	110
Ponti	DC	-	-	220
"	AC	3	50	125/220

NAME	TYPE	PHASE	CYCLE	VOLT
Pontida	AC	3	50	150
Pontirolo Nuovo	AC	3	50	125/220
Ponti Sul Mincio	AC	3	42	135/240
Pontoglio	AC	3	42	125/220
Ponzano Monferrato	AC	3	42	125/220
Ponzano Veneto	AC	3	42	125/220
Ponzone	AC	3	50	125/220
Porcia	AC	3	42	125/220
Pordenone	AC	3	42	125/220
Porlezza	AC	3	50	125/220
"	AC	3	50	125
Porpetto	AC	3	50	110/190
Portacomaro	AC	3	50	125/220
Portalbera	AC	3	42	125/220
Porte	AC	3	50	125/220
Portico E San Benedetto	AC	3	50	125/220
Port buffole'	AC	3	42	125/220
Porto Ceresio	AC	3	50	110/190
Portofino	AC	2	50	150/260
Portogruaro	AC	3	42	125/220
Portole	No electricity			
Portomaggiore	AC	3	42	125/220
Porto Mantovano	AC	3	42	125/220
Porto Tolle	AC	3	42	125/220
Porto Valtravaglia	AC	3	50	110/190-500
Portovenere	AC	3	42	200/350
Portula	AC	3	42	145/250
Posina	DC	-	-	220
Possagno	AC	3	50	115/200
Postal	AC	3	46	120
Postalesio	DC	-	-	125
Postua	AC	3	42	145/250
Postumia	DC	-	-	220/440-500
Pove	AC	3	42	125/220
Povegliano	AC	3	42	125/220
Povegliano Veronese	AC	3	42	125/220
Poviglio	AC	3	42	125/220
Povoletto	AC	3	42	125/220
Pozzaglio Ed Uniti	AC	3	42	145/250
Pozzo D'Adda	AC	3	42	145/250
Pozzolengo	AC	3	42	135/240
Pozzoleone	AC	3	42	125/220
Pozzol Groppo	No electricity			
Pozzolo Formigaro	AC	3	50	125/220
Pozzonovo	AC	3	42	125/220
Pozzuolo Del Friuli	AC	3	42	125/220
Pozzuolo Martesana	AC	3	42	145/250
Pradalunga	AC	3	50	150

NAME	TYPE	PHASE	CYCLE	VOLT
Pradamano	AC	3	50	65/110
Pradleves	DC	-	-	125
Praduro E Sasso	AC	3	42	115/200
Pragelato	DC	-	-	120
Pralboino	AC	3	42	125/220
Pralormo	AC	3	50	125/220
Pralungo	AC	3	50	150/250-500
Praly	AC	3	50	127/220
Pramaggiore	AC	3	42	125/220
Prarolo	AC	3	42	125/220
Prasco	AC	3	50	220
Prata Camportaccio	AC	1-3	42	115/200
Prata Di Pordenone	AC	3	42	125/220
Prati	AC	3	50	120
Pratiglione	AC	3	50	125/125-220-500
Prato Allo Stelvio	AC	3	50	150
"	AC	3	50	220/380
Prato Carnico	AC	3	50	125/220
Prato Sesia	AC	3	50	240
"	AC	3	50	135/240
Pravisdomini	AC	3	42	125
Pray	AC	3	42	145/250
"	AC	3	50	125/220
"	AC	3	42	145
Prazzo	AC	3	42	125/220
Precenicco	AC	3	42	125/220
Predappio Nuova	AC	3	50	125/220
Predazzo	AC	3	42	220
Predore	AC	3	42	125/220
Preganziol	AC	3	42	125/220
Pregnana Milanese	AC	3	50	125/125-500
Pregola	No electricity			
Prela	AC	3	50	125
Premana	AC	3	42	115/200
Premariacco	AC	3	42	115/200
"	AC	3	42	125/220
Premeno	AC	3	42	125/220
"	AC	3	42	145/250
Premia	AC	3	42	125/220
Premilcuore	DC	-	-	150
Premosello	AC	3	42	125/220
Prepotto	No electricity			
Pre-Saint-Didier	DC	-	-	145
"	AC	3	50	135/225
Preseglie	AC	3	42	125/220
Presezzo	AC	3	50	125/220
Pressana	AC	3	42	125/220
Prevalle	AC	3	40	125/220
Priero Montezemolo	AC	3	50	125/220

NAME	TYPE	PHASE	CYCLE	VOLT
Prignano Sulla Secchia	No electricity			
Primaluna	AC	3	42	115/200
Primano	No electricity			
Primiero	AC	3	42	125/220
Priocca	AC	3	50	130/280-560
Priola	AC	3	50	135/230
"	DC	-	-	120/240
Proserpio	AC	3	42	160
Provaglio Val Sabbia	AC	3	42	125
Provalglio D'Iseo	AC	3	42	125/220
Puegnago	AC	3	42	125/220
Pulfero	AC	3	50	125/220
Pumenengo	AC	3	42	125/220
Puos D'Alpago	AC	3	42	125
Pusiano	AC	3	42	160
Quaranti	AC	3	50	125/220
Quaregna	AC	3	42	145/250
Quargnento	AC	3	42	125/220
Quarna	AC	3	42	125/220
Quarto Praetoria	AC	3	50	140/250
"	AC	3	50	125/220
"	AC	3	50	120
Quattordio	AC	3	42	125/220
Quattro Castella	AC	3	42	125/220
Quero	AC	3	42	125/220
Quiliano	AC	3	50	150/260
Quingentole	AC	3	42	125/220
Quintano	AC	3	42	150/250
Quinto Di Treviso	AC	3	42	125/220
Quinto Vercellese	AC	3	42	125/220
Quinto Vicentino	AC	3	42	125/220
Quinzano D'Oglio	AC	3	42	125/220
Quistello	AC	3	42	125/220
Quittengo	AC	3	42	220
Rabbi	DC	-	-	120
"	DC	-	-	150-250
Racconigi	AC	3	50	125/220
Racines	AC	1	50	220
"	AC	3	50	220
"	AC	3	50	150
Ragogna	AC	3	50	125/220
Ragoli	AC	3	42	115/200
Ramiseto	AC	3	42	200/350
Ramponio Verna	AC	3	50	125
Rancio Valcuvia	AC	3	50	110/190
Ranica	AC	3	50	150
Ranzanico	AC	3	42	125
Ranziano	AC	3	50	150/260
Rapallo	AC	3	50	150/260
"	AC	3	50	125/220
"	AC	3	50	127/220

NAME	TYPE	PHASE	CYCLE	VOLT
Rassa	AC	3	42	150
Rasun Valdaora	AC	3	50	125/220
Rasura	AC	3	50	160/280
Ravarino	AC	3	42	125/220
Ravascletto	AC	3	50	115/200
Ravenna	AC	3	50	115-150/ 200-260
Raveo	AC	3	50	115
Re	AC	1	42	125
"	DC	-	-	220
Reana Del Roiale	AC	3	42	125/220
Reano	AC	3	50	125/220
Rebbio	AC	3	50	125/220
Recco	AC	3	50	125/220
Recetto	AC	3	42	125/220
Redavalle	AC	3	42	125/220
Redoaro	AC	3	38	110/190
"	AC	3	38	115/200
"	DC	-	-	120
Redondesco	AC	3	42	125/220
Refrancore	AC	3	50	125/220
Reggio Emilia	AC	3	42	125/220
"	AC	3	42	125-160/ 220-270
"	AC	3	42	125-220/220
Remanzacco	AC	3	42	125/220
"	AC	3	42	65/110
Remedello	AC	3	42	125/220
Renate Veduggio	AC	3	42	115/200
Renon	AC	3	50	125/220
"	AC	3	50	127/220
Resana	AC	3	42	125/220
Rescaldina	AC	3	50	125/125-500
Resia	AC	3	42	125/220
Resiutta	AC	3	42	125/220
Retorbido	AC	3	42	125/220
Revello	AC	3	50	125/220
Revere	AC	3	52	125/220
Revigliasco D'Asti	AC	3	50	125/220
Revine Lago	AC	3	42	125/220
Revo'	AC	3	42	120
"	AC	3	50	125/220
Rezzato	AC	3	42	125/220
Rezzoaglio	AC	3	50	125/220
Rhemes	DC	-	-	150
Rho	AC	3	50	125/125-500
"	AC	3	50	125/220
Ribordone	DC	-	-	220
Ricaldone	AC	3	50	125/220
Riccione	AC	3	50	120/210

NAME	TYPE	PHASE	CYCLE	VOLT
Ricengo	AC	3	42	145/250
Riese	AC	3	42	125/220
"	AC	3	50	115/200
Rifembergo	No electricity			
Rifiano	AC	3	46	120
Rifreddo	No electricity			
Rigolato	AC	3	50	115/200
Rima San Giuseppe	No electricity			
Rimasco	AC	3	42	125/220
Rimella	No electricity			
Rimini	AC	3	50	115/200
Rio Di Pusteria	AC	3	50	150
"	AC	3	42	115/200
Riolo Dei Bagni	AC	3	50	125/220
Riolunato	AC	3	42	125/220
Rio Maggiore	AC	3	42	200/350
Rio Saliceto	AC	3	42	125/220
Ripalta Arpina	AC	3	42	145/250
Ripalta Cremasca	AC	3	42	145/250
Rittana	DC	-	-	220
Riva	AC	3	50	110/190
Riva Di Solto	AC	3	42	125/220
Rivalba	AC	3	50	125/220
Rivalta Bormida	AC	3	50	125/220
Rivalta Di Torino	AC	3	50	150/250
"	AC	3	50	125/220
Rivamonte	AC	3	50	115/200
Rivanazzano	AC	3	42	125/220
Riva Presso Chieri	AC	3	50	125/220
Rivara	AC	3	50	125/220
"	DC	-	-	120
Rivarolo Canavese	AC	3	50	125/220
Rivarolo	No information			
Rivarolo Del Re Ed Uniti	AC	3	42	125/220
Rivarolo Mantovano	AC	3	42	125/220
Riva Santo Stefano	AC	3	50	125/220
Riva Trigoso	No information			
Riva Valdobbia	AC	3	50	120
Rive	AC	3	42	115/200
Rive D'Arcano	AC	3	42	115/200
"	AC	3	50	65/125
Rivergaro	AC	3	42	125/220
Riviera D'Adda	AC	3	42	150
Rivignano	AC	3	42	125/220
Rivoli	AC	3	50	125/220-500
Rivoli Veronese	AC	3	42	125/220
Rivolta D'Adda	AC	3	42	145/250
Ro	AC	3	42	125/220
Roana	AC	3	42	127/220
Roasio	AC	3	42	125/220
Robassomoro	AC	3	50	125/220

NAME	TYPE	PHASE	CYCLE	VOLT
Robbiate Paderno	AC	3	42	125/220
Robbio	AC	3	42	125/220
Robecchetto Con Induno	AC	3	50	125
"	AC	3	50	125/125-500
Robecco D'Oglio	AC	3	42	125/220
Robecco Pavese	AC	3	42	125
Robecco Sul Naviglio	AC	3	42	125
Robella	No electricity			
Robilante	AC	3	50	125/220
Roburent	AC	3	50	125/220
Roccabianca	AC	3	42	150/250
Roccabruna	No electricity			
Rocca Canavese	AC	3	50	125/220
Rocca Ciglie'	AC	3	50	125/220
Rocca D'Arazzo	AC	3	50	125/220
Rocca De'Baldi	AC	3	50	160/280-560
Rocca De'Giorgi	AC	3	42	125/220
Rocca Del Colle	AC	3	50	150
Roccaforte Ligure	No electricity			
Roccaforte Mondovi'	AC	3	50	125/220
Roccafranca	AC	3	42	125/220
Rocca Grimalda	AC	3	50	125/220
Rocca Pietore	AC	3	50	115/200
"	AC	3	50	150
Rocca San Casciano	AC	3	42	150/260
Roccasparvera	No electricity			
Rocca Susella	No electricity			
Roccaverano	No electricity			
Roccavione	AC	3	50	125/220
"	DC	-	-	120
Rocca Vignale	AC	3	50	125/220
Rocchetta di Vara	AC	3	42	200/350
Rocchetta Ligure	DC	-	-	110
"	AC	3	50	150
"	AC	3	42	125/220
Rocchetta Palafea	AC	3	50	125/220
Rocchetta Tanaro	AC	3	50	125/220
Rodano	AC	3	42	145/250
Roddi	AC	3	50	125/220
Roddino	AC	3	50	125/220
Rodello	AC	3	50	125/220
Rodengo Saiano	AC	3	42	125/220
Rodero	AC	3	50	125
Rodigo	AC	3	42	125/220
Roe' Volciano	AC	3	40	125/220
Rogeno	AC	3	42	160
Rognano	No electricity			
Rogno	AC	3	42	125/220
Rogolo	AC	3	50	125/220
Rolo	AC	3	42	125/220
Romagnano Sesia	AC	3	42	125/220

NAME	TYPE	PHASE	CYCLE	VOLT
Romanengo	AC	3	42	145/250
Romano D'Ezzelino	AC	3	42	125/220
Romano Di Lombardia	AC	3	42	145/250
Romans D'Isonzo	AC	3	42	125-220/220-380
Romeno	AC	3	42	120
"	AC	3	42	220
Romentino	AC	3	42	125/220
Ronago	AC	3	50	150/260
Ronca'	AC	3	42	125/220
Roncade	AC	3	42	125/220
Roncadelle	AC	3	42	125
Roncaro	No electricity			
Roncegno	AC	3	50	220
"	AC	3	50	150
Roncello	AC	3	42	145/250
Ronchi Dei Legionari	AC	3	42	125-220/220-380
Ronchis	AC	3	42	125/220
Ronco All'Adige	AC	3	42	125/220
Roncobello	AC	3	50	160/160-280
Ronco Biellese	AC	3	50	160
Ronco Briantino	AC	3	42	220
Ronco Canavese	DC	-	-	125
Roncoferraro	AC	3	42	125/220
Roncofreddo	AC	3	50	115
"	AC	3	50	125/220
Roncola	AC	3	50	150/260
Roncone	AC	3	42	150
"	AC	3	50	150
Ronco Scrivia	AC	3	50	150/260
Rondissone	AC	3	50	125/220
Ronsecco	AC	3	42	125/220
Roppolo	AC	3	50	125/220
Rosa'	AC	3	42	125/220
Rosasco	AC	3	42	125/220
Rosate	AC	3	42	125/220
Rosazza	AC	1	42	170
Rosignano Monferrato	AC	3	42	125/220
Rossa	AC	3	50	125/220-250
Rossana	AC	3	50	125
Rossano Veneto	AC	3	42	125/220
Rossiglione	AC	3	50	160/280
Rosta	AC	3	50	125/220
Rota D'Imagna	AC	3	50	150
Rottofreno	AC	3	42	125/220
Rotzo	AC	3	42	127/220
Rovasenda	No electricity			
Rovato	AC	3	42	125/220
Rovegno	DC	-	-	120/240
"	DC	-	-	125/250
Roverbella	AC	3	42	135/240
Roverchiara	AC	3	42	125/220

NAME	TYPE	PHASE	CYCLE	VOLT
Rovere' Della Luna	DC	-	-	110/220
Roveredo In Piano	DC	-	-	130
Rovereto	AC	3	50	220
Rovere' Veronese	AC	3	42	125
Rovescala	AC	3	42	125/220
Rovetta Con Fino	AC	3	50	150
Rovigno D'Istria	No electricity			
Rovigo	AC	3	42	125/220
Rovolon	AC	3	42	125/220
Rovi Porro	AC	3	50	127/220
"	AC	3	50	150/260
Rozzano	AC	3	42	160
Rozzo	No electricity			
Rubiana	AC	3	50	125/220
Rubiera	AC	3	42	125/220
Ruda	AC	3	42	125-220/ 220-380
"	AC	3	50	150
Rudiano	AC	3	42	125/220
Rueglio	AC	3	50	120/210
Ruino	No electricity			
Rumo	DC	-	-	110-220
"	AC	3	50	125/220
"	DC	-	-	220
Rupin Grande	No electricity			
Russi	AC	3	50	115/200
Sabbia	No electricity			
Sabbio Chiese	AC	3	42	125/220
Sabbioneta	AC	3	42	125/220
Saccolongo	AC	3	42	125/220
Sacile	AC	3	42	125/220
Sagrado	AC	3	42	125-220/220
"	AC	3	42	220-380
Saint Oyen	DC	-	-	110
Saint-Rhemy	AC	3	50	140
Saint-Vicent	AC	3	50	150/260
"	AC	3	50	140/250
Sala Baganza	AC	3	42	145/250
Sala Biellese	AC	3	50	125/220
Sala Bolognese	AC	3	42	125/220
Sala Monferrato	AC	3	42	125/220
Salara	No electricity			
Salasco	AC	3	42	125/220
Salassa	AC	3	50	110
"	AC	3	50	125
Salbertrand	DC	-	-	110
"	AC	3	50	125/220
Saledo	AC	3	42	125/220
Sale	AC	3	42	125/220
Sale Delle Langhe	AC	3	50	135/230

NAME	TYPE	PHASE	CYCLE	VOLT
Sale Marasino	AC	3	42	125/220
Salerano Canavese	AC	3	50	125/220
Salerano Sul Lambro	AC	3	42	125/220
Saletto	AC	3	42	125/220
Salgareda	AC	3	42	220
"	AC	3	42	125/220
Salicetto	AC	3	50	135/230
Sali Vercellese	AC	3	42	125/220
Salizzole	AC	3	42	125/220
Salmour	AC	3	50	160/280-560
Salo'	AC	3	42	125/220
Salona D'Isonzo	AC	3	42	220
Salorno	AC	1	50	120
Salsomaggiore	AC	3	42	115/250
Saludecio	AC	3	50	120/210
Saluggia	AC	3	50	220
Salussola	AC	3	50	125/220
Saluzzo	AC	3	50	125/220
Salvirola	AC	3	42	145/250
Salzano	AC	3	42	125/220
Samarate	AC	3	50	125/125-500
Sambasso	No electricity			
Sambuco Pietraporzio	DC	-	-	200
"	AC	3	50	125/220
Samolaco	AC	3	50	50-140/250
Samone	AC	3	50	125/220
Sampeyre	AC	3	50	125/220
Sampierdarena	No information; probably on Genova system.			
San Bartolemeo Val Cavargna	AC	3	50	140/250
San Bassano	AC	3	42	145/250
San Bellino	No electricity			
San Benedetto Po	AC	3	42	125/220
San Benedetto Val Di Sambro	No electricity			
San Benigno Canavese	AC	3	50	125/220
San Bernardino Verbano	AC	3	42	125/220
San Biagio della Cima	AC	3	50	200/350
San Biagio Di Callalta	AC	3	42	115/200
San Bonifacio	AC	3	42	125/220
San Candido	AC	3	50	150-220-380
"	AC	3	50	150
San Canzian D'Isonzo	AC	3	42	125-220/220-380
San Cesario Sul Panaro	AC	3	42	125/220
San Cipriano Po	AC	3	42	125
San Clemente	AC	3	50	115/200
"	AC	3	50	125/220
San Colombano Al Lambro	AC	3	42	125/220
San Cristoforo	AC	3	50	125/220
San Damiano Al Colle	AC	3	42	125/220

NAME	TYPE	PHASE	CYCLE	VOLTS
San Damiano D'Asti	AC	3	50	125/220
San Damiano Macra	AC	3	42	220
San Daniele Del Carso	AC	3	42	125/220
San Daniele Del Friuli	AC	3	42	125/220
San Daniele Ripa Po	AC	3	42	115/250
San Didero	AC	3	50	125/220
Sandigliano	AC	3	50	125
San Dona'Di Piave	AC	3	42	125/220
San Donato Milanese	AC	3	42	160
San Dorligo Della Valle	AC	3	42	125-220/220-380
Sandrigo	AC	3	42	125/220
San Fedele	AC	3	50	125/125-220
"	DC	-	-	600-700
San Felice Del Benaco	AC	3	42	125/220
San Felice Sul Panaro	AC	3	42	125/220
San Fermo Della Battaglia	AC	3	50	125/220
San Fior	AC	3	42	125/220
San Fiorano	AC	3	42	125/220
San Francesco Al Campo	AC	3	50	125/220
Sanfront	AC	3	50	125/220
San Genesio Atesino	No electricity			
San Genesio Ed Uniti	AC	3	42	125/220
San Germano Chisone	AC	3	50	125/220
San Germano Dei Berici	No electricity			
San Germano Vercellese	AC	3	42	125/220
San Gervascio Bresciano	AC	3	42	125/220
San Giacomo Delle Segnate	AC	3	42	125/220
San Giacomo Filippo	AC	1&3	42	115/200
San Giacomo In Colle	No electricity			
San Gillio Torinese	AC	3	50	125/220
San Giorgio Canavese	AC	3	50	125/220
San Giorgio Della Richinvelda	AC	3	42	125/220
San Giorgio Delle Pertiche	AC	3	42	125/220
San Giorgio Di Lomellina	AC	3	42	125/220
San Giorgio Di Mantova	AC	3	42	125/220
San Giorgio Di Nogaro	AC	3	42	125/220
San Giorgio Di Piano	AC	3	42	125/220
San Giorgio In Bosco	AC	3	42	125/220
San Giorgio Monferrato	AC	3	42	115/220
San Giorgio Piacentino	AC	3	42	125/220
San Giorgio Scarampi	No electricity			
San Giorgio Su Legnano	AC	3	50	125/220-500
San Giorio	AC	3	50	125/220
San Giovanni	No information			
San Giovanni Al Natisone	AC	3	42	125/220
San Giovanni Bianco	AC	3	42	125/220
"	AC	3	50	150/260
San Giovanni Del Dosso	AC	3	42	125/220

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NAME	TYPE	PHASE	CYCLE	VOLT
San Giovanni Ilarione	AC	3	42	125/220
"	DC	-	-	110
San Giovanni In Marignano	AC	3	50	120/210
San Giovanni In Persiceto	AC	3	42	115/200
San Giulliano Milanese	AC	3	42	125/220-530
San Giusto Canavese	AC	3	50	125/220
San Gregorio Nelle Alpi	AC	3	50	150/260
Sanguinetto	AC	3	42	125/220
San Lazzaro Di Savena	AC	3	42	115/200
San Lazzaro Parmense	AC	3	42	125/220
San Leonardo	AC	3	42	125/220
San Leonardo In Passiria	DC	-	-	210-220
"	DC	-	-	220
San Lorenzo al Mare	AC	3	50	127/220
San Lorenzo In Banale	AC	3	50	150
"	AC	3	50	220/380
San Lorenzo In Pusteria	AC	3	50	220
"	DC	-	-	220
San Martino Alfieri	No electricity			
San Martino Buonalbergo	AC	3	42	125/220
San Martino Canavese	AC	3	50	125/220
San Martino Dall'Argine	AC	3	42	125/220
San Martino Dei Calvi	AC	3	42	125
San Martino Del Calvi	AC	3	42	125
San Martino Del Lago	AC	3	42	145/250
San Martino Di Lupari	AC	3	42	125/220
San Martino Di Venezze	No Electricity			
San Martino In Badia	AC	3	50	220/380
"	DC	-	-	220
San Martino In Rio	AC	3	42	125/220
San Martino In Strada	AC	3	50	125/220
San Martino Quisca	No Electricity			
San Martino Siccomario	AC	3	42	125/220
San Marzano Moasca	AC	3	50	125/220
San Mauro Di Romagna	AC	3	50	150/260
San Mauro Di Saline	AC	3	42	125/220
San Mauro Torinese	AC	3	50	125/220
San Michele All'Adige	AC	3	50	220
San Michele Al Tagliamento	AC	3	42	125/220
San Michele Del Quarto	AC	3	42	125/220
San Michele Di Postumia	No Electricity			
San Michele Mondovi'	AC	3	50	125/220
San Morizio Canavese	AC	3	50	125/220
San Nazario	AC	3	42	125/220
"	AC	3	50	150/250
Sannazzaro De' Burgondi	AC	3	42	125/220
San Nazzaro Sesia	AC	3	42	125/220
San Nicolo' Di Comelico	AC	3	50	115
San Pancrazio Parmense	AC	3	42	125/220
San Paolo Cervo	AC	3	42	220
San Paolo Solbrito	AC	3	50	125/220
San Pellegrino	AC	3	42	125/220
"	AC	3	50	160

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NAME	TYPE	PHASE	CYCLE	VOLT
San Pier D'Isonzo	AC	3	42	125-220/220
San Pietro Al Natisone	AC	3	42	115/200
San Pietro Cadore	AC	3	50	115
San Pietro Del Carso	AC	3	50	110
San Pietro Di Feletto	AC	3	42	125/220
San Pietro Di Morubio	AC	3	42	125/220
San Pietro In Cariano	AC	3	42	125/220
San Pietro In Casale	AC	3	42	125/220
San Pietro In Cerro	AC	3	42	140/250
San Pietro In Gu	AC	3	42	125/220
San Pietro Montagnon	AC	3	42	125/220
San Pietro Mosezzo	AC	3	42	125/220
San Pietro Mussolino	AC	3	42	125/220
San Pietro Val Lemina	AC	3	50	125/220
San Pietro Viminario	AC	3	42	125/220
San Polo D'Enza In Caviano	AC	3	42	125/220
San Polo Di Piave	AC	3	42	125/220
San Possidonio	AC	3	42	125/220
San Prospero	AC	3	42	125/220
San Quirino	AC	3	42	125
San Remo	DC	-	-	110/220/500
San Roco Al Porto	AC	3	42	125/220
San Salvatore Monferrato	AC	3	42	125/220
San Sebastiano Curone	AC	-	-	152
San Sebastiano Curone	AC	3	50	150/260
San Sebastiano da Po	AC	3	50	125/220
San Secondo Di Pinerolo	AC	3	50	125/220
San Secondo Parmense	AC	3	42	145/250
Santa Brigida	DC	-	-	110
"	AC	3	50	150
Santa Cristina	AC	3	50	150
"	AC	3	50	150-220/150-380
Santa Cristina e Bissone	AC	3	42	125/220
Santa Croce di Aidussina	No Electricity			
Sant' Agata Bolognese	AC	3	42	125/220
"	AC	3	42	150/260
Sant' Agata Fossili	AC	3	50	125/220
Sant' Agata Sul Santerno	AC	3	42	150/260
Santa Guilietta	AC	3	42	125/220
Santa Giustina	AC	3	42	125/220
"	AC	3	50	150/220
Santa Giustina In Colle	AC	3	42	125/220
"	DC	-	-	125
Sant' Agostino	AC	3	42	125/220
Santalbano Stura	AC	3	50	162/280/560
"	AC	3	50	125/220
Santa Lucia Di Piave	AC	3	42	125/220
Santa Lucia Di Tolmino	AC	3	50	280
Santa Margherita D'Adige	AC	3	42	125/220
Santa Margherita Di Staffora	DC	-	-	120
Santa Margherita Ligure	AC	3	50	127/220
"	AC	3	50	125/220
"	AC	3	50	150/260
Santa Maria Della Versa	AC	3	42	125/220
Santa Maria D. Rovegnate	AC	3	42	125/220
Santa Maria D. Sala	AC	3	42	125-220/220
Santa Maria La Longa	AC	3	42	125/220

NAME	TYPE	PHASE	CYCLE	VOLT
Santa Maria Maggiore	AC	1	42	125/220
Santa Maria Rezzonico	AC	3	50	125/220
Sant'Ambrogio di Torino	AC	3	50	125/220-500
"	AC	3	50	125/220
Sant' Ambrogio i Valpolicella	AC	3	42	125/220
"	AC	3	42	135/240
Sant' Andrea In Monte	No Electricity			
Sant' Angelo di Piove di Sacco	AC	3	42	125/220
Sant' Angelo Lodigiano	AC	3	42	125/220
Sant' Angelo Lomellina	AC	3	42	125/220
Sant' Anna D'Alfaedo	AC	3	42	125/220
Sant' Antonino di Susa	DC	-	-	150
"	AC	3	50	125/220
Sant' Arcangelo di Romagna	AC	3	50	115/200
Santa Sofia	AC	3	50	150/260
Santa Valeria	AC	3	42	160
Sant' Elena	AC	3	42	125/220
Santena	AC	3	50	125/220
Santhia'	AC	3	50	125/220
"	AC	3	42	145/250
Sant' Ilario D'Enza	AC	3	42	125/220
San Tommaso	AC	3	50	115/200
Sant' Omobono Imagna	AC	3	50	150
Santorso	AC	3	42	125/220
Sant' Orsola	AC	3	42	200
Santo Stefano Belbo	AC	3	50	125/220
Santo Stefano Di Cadore	AC	3	50	115
Santo Stefano di Magra	AC	3	42	125/220
Santo Stefano Lodigiano	AC	3	42	125/220
Santo Stefano Roero	AC	3	50	125/220
Santo Stefano Ticino	AC	3	50	125/220
Santo Stino Di Livenza	AC	3	42	125/220
Sant' Urbano	AC	3	42	125-220/220
San Vendemmiano	AC	3	42	125/220
Sanvincenti	No electricity			
San Vito Al Tagliamento	AC	3	42	125/220
San Vito Al Torre	AC	3	42	125-220/220-380
San Vito Di Cadore	AC	3	42	115/200
San Vito Di Leguzzano	AC	3	42	125/220
San Vito Di Vipacco	No electricity			
San Vittore Olona	AC	3	50	125/125-500
Sanzeno	AC	3	42	120
"	AC	3	42	220
San Zeno Di Montagna	AC	3	42	125

NAME	TYPE	PHASE	CYCLE	VOLT
San Zeno Naviglio	AC	3	42	125
San Zenone Al Lambro	AC	3	42	125/220-530
San Zenone Al Po	AC	3	42	125/220
San Zenone Degli Ezzelini	AC	3	50	115/200
Saonara	AC	3	42	125/220
Sappada	AC	3	50	115
Sarcedo	AC	3	42	125/220
Sardigliano	AC	3	50	125/220
Sarego	AC	3	42	125/220
Sarentino	DC	-	-	2 X 220
Sarezzano	AC	3	42	125/220
Sarezzo	AC	3	50	115/200
"	DC	-	-	110
Sarmato	AC	3	42	125/220
Sarmede	AC	3	42	220
Sarnico	AC	3	42	125/220
Saronno	AC	3	50	125/220
"	AC	3	50	125/125-500
Sarsina	AC	3	50	150/260
Sartirana Lomellina	AC	3	42	110/190
"	AC	3	42	190
Sarzana	AC	3	42	150/260-500
Sassello	DC	-	-	220
Sassuolo	AC	3	42	125/220
Sauris	AC	3	50	110/190
Savigliano	AC	3	50	125/220
"	DC	-	-	125
Savignano Di Romagna	AC	3	50	115/200
Savignano Sul Panaro	AC	3	42	125/220
Savigno	No electricity			
Savignone	AC	3	50	150/260
Savogna	No electricity			
Savona	AC	3	50	150/260
Scaldasole	AC	3	42	125/220
Scalenghe	AC	3	50	125/220
Scandeluzza	AC	3	50	125/220
Scandiano	AC	3	42	125/220
Scandolara Ravara	AC	3	42	125/220
Scandolara Ripa D'Oglio	AC	3	50	125/220-500
Scanzorosciate	AC	3	50	160
Scarnafigi Ruffia	AC	3	50	160/280-560
Scena	AC	3	46	120
Schiavon	AC	3	42	125/220
Schignano	AC	3	50	125/220
Schilpario	AC	3	42	125/220
Schio	AC	3	42	125/220
"	AC	3	38	110/190
Schivenoglia	AC	3	42	125/220
Sciolze	AC	3	50	125/220

NAME	TYPE	PHASE	CYCLE	VOLT
Scopa	AC	3	42	160
Scopello	AC	3	42	160
Scorticata	AC	3	50	125/220
Scorze'	AC	3	42	125/220
Scurzolengo	AC	3	50	125/220
Seborga	Not electrified		1931	
Secugnago	AC	3	42	125/220
Sedegliano	AC	3	42	125/220
Sedico	AC	3	42	125/220
Sedriano	AC	3	50	125/220-500
Sedrina	AC	3	42	125/220
Segonzano	AC	3	50	220
Segrate	AC	3	42	145/250
Segusino	AC	3	42	125
Selva	AC	3	50	150
Selva Dei Molini	DC	-	-	220
Selva Di Cadore	AC	3	50	150
Selva Di Progno	AC	3	42	125/220
Selvazzano Dentro	AC	3	42	125/220
Selve Marcone	AC	3	50	125/220
Selvino	AC	3	50	150/260
Semiana	AC	3	42	125/220
Senago	AC	3	42	115/200
Senales	AC	3	46	120
Seniga	AC	3	42	125/220
Senna Comasco	AC	3	42	125/220
Senna Lodigiana	AC	3	42	120/210
Senosecchia	Electricity being installed			
Seprio	AC	3	50	40-125/220
Sequals	AC	3	42	125
Seregno	AC	3	42	220
Seren Del Grappa	AC	3	50	150/260-300
Sergnano	AC	3	42	145/250
Seriate	AC	3	50	150/260-500
Serina	AC	3	50	160
Serle	AC	3	42	125/220
Sermide	AC	3	42	125/220
Sernaglia Della Battaglia	AC	3	42	125/220
Sernio	AC	3	50	110/190
Serole	No electricity			
Serradifalco	AC	3	50	150
Serralunga Di Crea	AC	3	50	125/220
Serra Ricco	AC	3	50	125/220
Serravalle a Po	AC	3	42	125/220
Serravalle delle Langhe	AC	3	50	125/220
Serravalle Scrivia	AC	3	50	150/260
Serravalle Sesia	AC	3	50	135/240
"	AC	3	50	125/220-250
"	AC	3	42	250/450

NAME	TYPE	PHASE	CYCLE	VOLT
Sesana	No electricity			
Sessame	AC	3	50	125/220
Sesta Godano	AC	3	42	110/190
Sesto Calende	AC	3	50	125/125-500
"	AC	3	50	125
Sesto ed Uniti	AC	3	42	145/250
"	AC	3	42	125/220
Sesto San Giovanni	AC	3	42	160
Sestri Levante	AC	3	50	150/260
Sestola	AC	3	42	125/220
Settala	AC	3	42	145/250
Settime	AC	3	50	125/220
Settimo Milanese	AC	3	50	125/125-500
Settimo Tavagnasco	AC	3	50	125/220
Settimo Torinese	AC	3	50	125/220
"	AC	3	50	220
Seveso	AC	3	42	150
Sezzadio	AC	3	42	125/220
Sgonico	No electricity			
Siesto Al Reghena	AC	3	42	125/220
"	DC	-	-	110
Silandro	AC	3	50	150
"	AC	3	42	120
"	DC	-	-	150/300
Silvano D'Orba	AC	3	50	125/220
Silvano Pietra	AC	3	42	125/220
Sinio	AC	3	50	125/220
Sirmione	AC	3	42	125/220
Sirone	AC	3	42	160
Sissa	AC	3	42	145/250
Siziano	AC	3	42	125/220-530
Sizzano	AC	3	42	130/220
Sluderno	AC	3	50	150
Soave	AC	3	42	125/220
Socchieve	AC	3	50	115
"	AC	3	50	145
Sogliano al Rubicone	AC	3	50	150/260
"	AC	3	50	125/220
Soglio	AC	3	50	125/220
Solagna	AC	3	42	125/220
Solaro	AC	3	50	125/220
Solarolo	AC	3	42	115/200
Solbiate	AC	3	50	125
Solbiate Arno e Monte	AC	3	50	125/125-500
Solbiate Olona	AC	3	50	125/125-500
Solero	AC	3	42	125/220
Solesino	AC	3	42	125/220
Solferino	AC	3	42	135/240
Soliera	AC	3	42	125/220
Solignano	No electricity			

NAME	TYPE	PHASE	CYCLE	VOLT
Solto Collina	AC	3	42	125
Sommacampagna	AC	3	42	135/240
"	AC	3	42	125/220
Somaglia	AC	3	42	120/210
Somma Lombardo	AC	3	50	125/220-500
"	AC	3	50	125/125-500
Sommariva Del Bosco	AC	3	50	125/220
Sommo	AC	3	42	125/220
Sona	AC	3	42	135/240
"	AC	3	42	125/220
Soncino	AC	3	42	145/250
Sondalo	AC	3	42	125/220
Sondrio	AC	3	50	105/185
Songavazzo	AC	3	50	150
Sonzia	No electricity			
Soprana	AC	3	42	250/450
Soragna	AC	3	42	125/220
Sorbano	AC	3	50	125/220
Sorbolo	AC	3	42	125/220
Sordevolo	AC	3	50	125/220
Sordio	AC	3	42	125/220
Soresina	AC	3	42	170
Sorga'	AC	3	42	125/220
Sori	AC	3	50	127/220
"	AC	3	50	125/220
Sorico	No electricity			
Soriso	AC	3	42	130
Sorisole	AC	3	50	150
Sospiro	AC	3	42	150/260
Sospirolo	AC	3	50	150/260
"	AC	3	42	125/220
Sossano	AC	3	42	125/220
"	AC	3	42	125
Sostegno	AC	3	50	160
"	AC	3	42	125/220
Sotto Il Monte	AC	3	42	160
Sover	AC	3	50	220
Sovere	AC	3	50	160
Soverzene	No electricity			
Sovico	AC	3	42	125/220
Sovizzo	AC	3	42	125/220
Sovramonte	AC	3	42	125/220
Sozzago	AC	3	42	115/200
Sparone	AC	3	50	250
Spesiano	AC	3	50	125/220
"	AC	3	42	125/220
Spessa	AC	3	42	125
Spezia	AC	3	42	125-200/220-350
"	DC	-	-	500
Spiazzo	AC	3	42	115/200

NAME	TYPE	PHASE	CYCLE	VOLT
Spigno Monferrato	AC	3	50	125/220
Spilamberto	AC	3	42	125/220
Spil	AC	3	42	125/220
Spinadesco	AC	3	42	145/250
"	DC	-	-	220
Spinea	AC	3	42	125/220
Spineda	AC	3	42	125/220
Spineto Scrivia	AC	3	50	125/220
Spino D'Adda	AC	3	42	145/250
Spinone dei Castelli	AC	3	42	125/220
Spirano	AC	3	50	150/260
Spor	AC	3	42	110-150-220
Spotorno	AC	3	50	127/220
Spriana	AC	3	50	125/220
Stagno Lombardo	AC	3	42	145/250
Stanghella	AC	3	42	125/220
Staranzano	AC	3	42	125-220/220-380
Stazzano	AC	3	50	150/260
Stazzona Germasino	AC	3	50	125/220
Stellanello	Not electrified 1931.			
Stenico	AC	3	50	150
Stezzano	AC	3	50	150
Stienta	AC	3	42	125/220
Storo	AC	3	50	120
Stra'	AC	3	42	125-220/220
Stradella	AC	3	42	125/220
"	DC	-	-	125
Strambino Romano	AC	3	50	65-125/220-500
Stregna	No electricity			
Strembo	AC	3	42	115/200
Stresa Borromeo	AC	3	42	125/220
Strevi	AC	3	50	125/220
Strigno	AC	3	50	150
"	AC	3	50	220
"	DC	-	-	2 X 260
Strona	AC	3	42	145/250
Stroppiana	AC	3	42	125/220
Stroppo	AC	3	42	125/220
Strozza	AC	3	50	150/500
Suardi	AC	3	42	125/220
Sueglio	AC	3	42	115/200
Suisio	AC	3	42	160
Sulbiate	AC	3	42	160
Sumirago	AC	3	50	125/125-500
Sumo	AC	3	42	125/220
Susa	AC	3	50	125/220
"	DC	-	-	150/300

NAME	TYPE	PHASE	CYCLE	VOLT
Susegana	AC	3	50	125/220
Sustinente	AC	3	42	125/220
Sutrio	AC	3	50	115/200
Suzzara	AC	3	42	125/220

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NAME	TYPE	PHASE	CYCL.	VOLT
Taceno	AC	3	42	115/200
Taggia	AC	3	50	125/220
Tagliolo Deliorte	AC	3	50	125/220
Taglio Di P.	AC	3	42	125/220
Taglio Di Porto Viro	AC	3	42	125/220
Taibon	AC	3	50	115/200
Tainc	AC	3	50	110/190
Taio	AC	3	42	115/200
"	AC	3	50	125/220
"	AC	3	42	125/220
Talamona	AC	3	50	110/190
"	DC	-	-	100/100
Taleggio	AC	3	50	115/200
Talmassons	AC	3	42	125/220
Tambre D'Alpago	AC	3	42	125/220
Tarantasca	AC	3	50	125/220
Tarcento	AC	3	42	115/200
"	DC	-	-	125/250
Tarnova della Selva	No electricity			
Tartano	AC	3	50	125/220
Tarvisio	DC	-	-	2 X 220
"	AC	2	50	250
Tarzo	AC	3	42	125/220
Tassarolo	AC	3	50	125/220
Tassullo	AC	3	42	115/200
Tavagnacco	AC	3	42	115/200
Tavernerio	AC	3	50	125/220
Tavernola Bergamasca	AC	3	42	125/220
Tavernole Sul Mella	AC	3	42	125
"	AC	3	42	125/220
Teglio	AC	3	50	125/220
"	AC	3	42	110/190
Teglio Veneto	AC	3	42	125/220
Telgate	AC	3	42	125/220
Temenizza	No electricity			
Temu'	AC	3	42	125/220
"	AC	1	42	130
Tenda	AC	3	50	125/220
Tenna	AC	3	50	220
Teolo	AC	3	42	125/220
Teor	AC	3	42	125/220
Terdobbiate	AC	3	42	105
"	AC	3	50	125/220
Terento	AC	3	42	220
"	AC	3	50	220
Terenzo	AC	3	42	200/350
Terlago	AC	3	50	220
Terluno	AC	3	40	120
Termeno	AC	1	50	120
Ternate	AC	3	50	110/190

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NAME	TYPE	PHASE	CYCLE	VOLT
Ternengo	AC	3	50	125/220-500
Terno D'Isola	AC	3	42	100
Terragnolo	No electricity			
Terranuova dei Passerini	AC	3	42	125/220
Terrassa Padovana	No electricity			
Terruglia	AC	3	42	125/220
Terrazzo	AC	3	42	125/220
Tesero	DC	-	-	220/220-440
Tesimo	AC	3	50	150
Tezze	AC	3	42	125/220
Thiene	AC	3	50	125/220
"	AC	3	42	127/220
Tiarno	AC	3	50	120
Ticengo	AC	3	42	145/250
Tigliole	AC	3	50	125/220
Tignale	AC	3	42	125/220
Tione Di Trento	AC	3	42	115/200
"	DC	-	-	220
Tirano	AC	3	50	110/190
Tires	AC	3	50	220
Tirolo	AC	3	42	120
Tizzano Val Parma	AC	3	42	125/220
Toano	AC	3	42	125/220
Toirano	AC	3	50	127/220
Tolmezzo	AC	3	50	115/200
"	DC	-	-	130-150
"	AC	3	42	125/220
Tolmino	AC	3	50	125/220
Tomadio	No electricity			
Tombolo	AC	3	42	125/220
Ton	AC	3	42	110
Tonco	AC	3	50	125/220
Tonezza	AC	3	42	127/220
Torbole Casaglia	AC	3	42	125/220
Torgnon	AC	3	50	125/220
Torino	AC	3	50	125/220 & 50
"	AC	3	50	125/220
Torlino	AC	3	42	145/250
Tornaco	AC	3	42	120
"	AC	3	50	125/220
Tornata	AC	3	42	125/220
Torno	AC	3	50	125/220
Tornolo	AC	3	42	140/245
"	AC	3	50	150/250
Tortona	AC	3	42	125/220
Torrazza Coste	AC	3	42	125/220
Torrazza Piemonte	AC	3	50	125/220
Torrazz	AC	3	50	125/220
Torreano	AC	3	42	125/220
Torrebelvicino	AC	3	42	125/220
Torre Beretti e Castellaro	AC	3	42	125/220
Torre Boldone	AC	3	50	150/150-500
Torre D'Arese	AC	3	42	125/220
Torre D'Isola	AC	3	42	125/220
Torre De' Busi	AC	3	50	150

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NAME	TYPE	PHASE	CYCLE	VOLT
Torre de Picenardi	AC	3	42	15/220
Torre dei Roveri	AC	3	50	150
Torri del Benaco	AC	3	50	125/220
Torri di Quartesolo	AC	3	42	120-130/ 210-220
Torre di Santa Maria	AC	1	42	110
Torre Mondovi'	AC	3	50	125/220
Torre di Mosto	AC	3	42	125/220
Torre Pallavicina	No electricity			
Torre Pellice	AC	3	50	125/220
"	DC	-	-	220/440
Torreglia-	AC	3	42	125/220
Torrevecchia Pia	AC	3	42	125/220-530
Torricella Del Pizzo	AC	3	42	125/220
Torriglia	AC	3	50	150/200
Torrile	AC	3	42	125/220
Toscolano Maderno	AC	3	42	120
"	AC	3	42	125/220
Tossignano	AC	3	50	110
Tovo Di Sant' Agata	AC	3	42	125/220
Tovo San Giacomo	AC	3	50	125/220
Tradate	AC	3	50	40-125/125
Trambileno	AC	3	50	220
Tramonti Di Sopra	AC	3	42	125
"	DC	-	-	110
Trana	AC	3	50	125/220
Traona	AC	3	50	130/225
Trarego Viggiona	DC	-	-	250
Trasaghis	AC	3	42	125/125-220
Trasquera	AC	3	42	115
Travaco' Siccomario	AC	3	42	125/220
Travedona Monate	AC	3	50	110/190
Travagliato	AC	3	42	125/220
Traversella	AC	3	50	125/220
Traversetolo	AC	3	42	125/220
Traves	No electricity			
Travesio	DC	-	-	75/150
Travo	AC	3	42	125/220
Trebaseleghe	AC	3	42	220
"	AC	3	42	125/220
Trecasali	AC	3	42	150/200
Treccate	AC	3	42	115/200
"	AC	3	42	130/225-500
Trecenta	AC	3	42	125/220
Tredozio	AC	3	42	125/220
Tregnago	AC	3	42	125/220
Tremenico	AC	3	50	140
Trenczzina	AC	3	50	220
Tremosine	AC	3	42	130
Trento	AC	3	50	220
"	DC	-	-	440
Trenzano	AC	3	42	125/220

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NAME	TYPE	PHASE	CYCLE	VOLT
Trenzano	AC	3	42	135/240
Treppo Carnico	AC	3	50	115/200
Treppo Grande	AC	3	42	125
Tres	AC	3	50	120
Trescore Balneario	AC	3	50	150/260
Trescore Cremasco	AC	3	42	145/250
Tresivio	AC	3	40	110-125/190
Tretto	AC	3	42	125/220
Trevano	AC	3	50	125/220
Trevenzuolo	AC	3	42	125/220
Trevignano	AC	3	42	125/220
Treviglio	AC	3	50	150/260-300
Treville	AC	3	42	125/220
Treviolo	AC	3	50	220
Treviso	AC	3	42	125/220
Treviso Bresciano	AC	3	42	125/220
Trezzone	No electricity			
Trezzano Rosa	AC	3	42	125/220
Trezzano Sul Naviglio	AC	3	42	125
Trezzo Sull'Adda	AC	3	42	145/250
Trezzo Tinella	AC	3	50	125/220
Tribano	AC	3	50	125/220
Tribiano	AC	3	50	145/250
Tricerro	AC	3	42	125/220
Tricesimo	AC	3	42	115/200
Trichiana	AC	3	50	145/250
Trieste	AC	3	42	105-120/ 105-120-210
"	DC	-	-	600
"	AC	3	42	220-380
"	AC	3	42	125-220/ 220-380
Trigolo	AC	3	42	145/250
Trinità'	AC	3	50	102/200-500
"	AC	3	50	160/280
Trino	AC	3	42	40-125-220/ 220
Trisobbio	AC	3	50	125
Trissino	AC	3	42	125/220
Triuggio	AC	3	42	100-120/500
Trivero	AC	3	42	145/250
Trivignano Udinese	AC	3	42	125/220
"	AC	3	50	125/220
Trivolzio	AC	3	42	125/220
Trodena	AC	3	42	220
Trofarello	AC	3	50	125/220
Tromello	AC	3	42	125/220
Trontano	AC	3	42	125/220
Tronzano Lago Maggiore	AC	3	50	155

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TOWN	TYPE	PHASE	CYCLE	VOLT
Tronzano Vercellese	AC	3	42	125/220
Trovo	AC	3	42	125/220
Truccazzano	AC	3	42	145/250
Tubre	AC	3	50	150
Tuenno	AC	3	42	120
Tunes	AC	3	50	120
Turano	AC	3	50	150
Turano Lodigiano	AC	3	42	125/220
Turate	AC	3	50	127/220
Turbigo	AC	3	50	150/260
"	AC	3	50	125/125-500
Turriaco	AC	3	42	125-220/ 220-330
Ubiale Clanezzo	AC	3	42	125/220
Udine	DC	-	-	300
"	AC	3	42	115/200
"	AC	3	50	115/200
"	AC	3	42	65/110
Ugliate	AC	3	50	125
Ultimo	No electricity			
Umago	No electricity			
Urago D'Oglio	AC	3	42	125/220
Urbana	No electricity			
Urbe	AC	3	50	125/220
Urbe	DC	-	-	125
Urgnano	AC	3	50	150
Uscio	AC	3	50	125/220
Usmate Velate	AC	3	42	130/220
Usseglio	AC	3	50	125/220
Vadena	AC	1	50	120
Vado Ligure	AC	3	50	127/220
Vaglio Serra	No electricity			
Vaiano Cremasco	AC	3	42	145/250
Vailate	AC	3	42	145/250
Valbondione	AC	3	50	125/220
"	AC	3	50	120
Valbrembo	AC	3	50	150
Valbrona	AC	3	42	100
Valchiusa	AC	3	50	110- 125-150
"	AC	3	50	125/220
"	DC	-	-	110/220

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TOWN	TYPE	PHASE	CYCLE	VOLT
Valdagno	AC	3	38	115/115-200
"	AC	3	38	110/190
"	AC	3	38	125/220
Valdagno Di Trento	DC	-	-	220
Valdarsa	No electricity			
Val Della Torre	AC	3	50	125/220
Valdengo	AC	3	50	125/220
Valdieri	AC	3	50	150
Valdigna D'Aosta	AC	3	50	160
"	DC	-	-	135
Val Di Nizza	AC	3	42	125
Valduggia	AC	3	50	135/240
Valdobbiadene	AC	3	42	125/220
Valeggio	AC	3	42	125/220
Valeggio Sul Mincio	AC	3	42	135/240
"	AC	3	42	125/220
Valenza	AC	3	42	125/220
Valera Fratta	AC	3	42	125
"	AC	3	42	125/220
Valfenera	AC	3	50	125/220
Valfortuna	AC	3	42	20
Valfurva	AC	3	42	125/220
Valgrana	AC	3	50	110/190-500
Valgrana	DC	-	-	125
Valgreghentino	AC	3	42	125/220
Valgrisanche	AC	3	50	125/220
Vallada	AC	3	50	150/260
Vallarsa	AC	3	50	220
Vallanzengo	AC	3	42	145/250
Valle Aurina	DC	-	-	250/450
"	AC	-	-	250/500
"	AC	3	50	250/450
Vallebona	AC	3	50	200/350
Vallecrosia	AC	3	50	200/350
Valle Di Cadore	AC	3	42	115/115-200
Valle Di Casies	No electricity			
Valle Di Dentro	AC	3	42	125/220
Valle D'Istria	No electricity			
Valle Di Sotto	AC	1	50	125
Valle Di Sotto	AC	3	42	125
"	AC	3	50	160
Valle Lomellina	AC	3	42	125/220
Valle Mosso	AC	3	50	125/220
"	AC	3	42	125/220
Valle Slaimbene	AC	3	42	125
Valle San Nicolao	AC	3	50	125/220
Valle Superiore Mosso	AC	3	50	125/220
"	AC	3	42	125/220
Valleve	AC	3	42	110/190

NAME	TYPE	PHASE	CYCLE	VOLT
Valli Del Pasubio	DC	-	-	220
"	AC	3	42	125/220
Vallio	DC	-	-	80
Vallomara	AC	3	42	125/220
Valloriate	DC	-	-	110
Valmacca	AC	3	42	125
Valmadrera	AC	3	42	125/220
Val Marchirolo	AC	3	50	110/190-500
"	AC	3	50	110/190
Val Masino	AC	3	50	120
Valmorea	AC	3	50	125
Valmozzola	No electricity			
Valpelline	AC	3	50	150/260
Valperga	AC	3	50	125/220
Valprato Soana	AC	3	50	125/220
Val Rezzo	No electricity			
Valrovina	AC	3	42	125/220
Valsavaranche	DC	-	-	240
Valsaviore	AC	3	42	125/220
"	AC	3	42	220
Valsecca	AC	3	50	150
Valsolda	AC	3	50	125/220
Valstagna	AC	3	42	125/220
"	AC	3	50	150/250
Valstrona	AC	3	42	150
"	DC	-	-	150/150
"	DC	-	-	150
Valtorta	AC	1	42	220
Valtournanche	AC	3	50	150/250
Valvasone	AC	3	42	125/220
Vandoies	AC	3	50	220-380
"	AC	3	50	160
Vanzago	AC	3	50	125/125-500
Vanzone Con San Carlo	AC	3	42	145/250
Vaprio D'Adda	AC	3	42	145/250
Vaprio D'Agogna	AC	3	42	130
Varallo	AC	3	50	145/250
"	AC	3	50	125/220-250
"	AC	3	42	125/220
"	AC	3	50	150
"	DC	-	-	150
Varallo Pombia	AC	3	42	180/270
Varano De' Melegari	AC	3	42	150/250
Varano Borghi	AC	3	50	110/190-500
"	AC	3	50	125/125-500
Varazze	AC	3	50	127-150/ 150-220
Varedo	AC	3	42	125/220

NAME	TYPE	PHASE	CYCLE	VOLT
Varenna	AC	3	42	115/200
Varese	AC	3	50	110/190-500
Varese Ligure	AC	3	42	200/350
Varmo	AC	3	42	125/220
Varna	AC	3	50	150
Varzi	AC	3	42	125/220
Varzi	DC	-	-	120
Varzo	AC	3	42	120
Vas	AC	3	50	120/230
Vasia	AC	3	50	125/220
Vayes	DC	-	-	150
Vazzola	AC	3	42	125/220
Vedano Al Lambro	AC	3	42	115/200
Vedano Olona	AC	3	50	125/125-500
Vedelago	AC	3	42	125/220
Veddasca	AC	3	50	110/190
Vedeseta	AC	3	50	150
Veggiano	AC	3	42	135/230
Veglio	AC	3	42	145/250
Velezzo Lomellina	No electricity			
Vellezzo Bellini	AC	3	42	125/220
Velo D'Astico	AC	3	42	127/220
Velo Veronese	AC	3	42	125/220
Venaria Reale	AC	3	50	125/220
Venasca	AC	3	50	125/220
Venaus	DC	-	-	125
Vendrogno	AC	3	42	115/200
Venegono	AC	3	50	125
Venezia	AC	3	42	115/200-600
Venezia	DC	-	-	500
Venezia	DC	-	-	125-150
Ventimiglia	AC	3	50	220/350
Venzone	AC	3	42	125/220
Verano Brianza	AC	3	42	115/200
Vercela	AC	3	40	140/250
Vercelli	DC	-	-	500
Vercelli	AC	3	42	220
Vercelli	AC	3	42	125/220
Vercurago	AC	3	42	125
Verdellino	AC	3	50	150
Verdello	AC	3	50	160
Verderio Inferiore	AC	3	42	125/220
Verderio Superiore	AC	3	42	125/220
Verduno	AC	3	50	125/220
Vergato	AC	3	42	127/220
Verghereto	AC	3	50	125/220
Vergiate	AC	3	50	125-500
Vergiate	AC	3	50	125/125-500
Vermezzo	AC	3	42	125
Vermiglio	AC	3	50	120
Vernante	DC	-	-	125
Vernasca	AC	3	42	125/220

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NAME	TYPE	PHASE	CYCLE	VOLT
Vernate	AC	3	42	125/220
Vernazza	AC	3	42	200/350
Verolanuova	AC	3	42	130-230/230
Verolengo	AC	3	50	125/220
Verona	AC	3	42	115/200
Verona	AC	3	42	125/220
Verona	DC	-	-	650
Veronella	AC	3	42	125/220
Verres	AC	3	50	125/220
Verretto	AC	3	42	125
Verrone	AC	3	50	125/220
Verrua Savoia	AC	3	50	125/220
Verrua Po	AC	3	42	125/220
Vertemate Con Minoprio	AC	3	50	125/220
Vertenoglio	No electricity			
Vertova	AC	3	50	115
Vertova	AC	3	50	150
Verucchio	AC	3	50	125/220
Verumo	AC	3	42	125/220
Vervio	AC	3	42	125
Verzegnis	AC	3	50	115/200
Verzuolo	AC	3	50	125/220
Vescovana	AC	3	42	125/220
Vescovato	AC	3	42	125/220
Vesime	DC	-	-	150
Vespolate	AC	3	50	125
Vestenanuova	AC	3	42	125/220
Vestigne'	AC	3	50	125/220
Vestone	AC	3	42	125/220
Vestreno	AC	3	42	115/200
Vetto	AC	3	42	125-220/220
Vetto	AC	3	50	125/220
Vezza D'Alba	AC	3	50	125/220
Vezza D'Alba	AC	3	50	160/280-560
Vezza D'Oglio	AC	3	42	125/220
Vezza D'Oglio	AC	1	42	130
Vezzano	AC	3	50	220
Vezzano Sul Crostolo	AC	3	42	125/220
Viadana	AC	3	42	125/220
Viadanica	No electricity			
Viale	AC	3	50	125/220
Viano	No electricity			
Viarigi	AC	3	50	125/220
Viconza	AC	3	42	125/220
Vicoforte	AC	3	50	125/220
Vicolungo	AC	3	42	125/220
Vidigulfo	AC	3	42	125/220-530
Vidolasco	AC	3	42	145/250
Vidor	AC	3	42	125/220
Vidracco	AC	3	50	125/220
Vigarano Mainarda	AC	3	42	125/220
Vigasio	AC	3	42	125/220
Vigatto	AC	3	42	125/220

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NAME	TYPE	PHASE	CYCLE	VOLT
Vigevano	AC	3	42	160
Viggiu' Ed Uniti	AC	3	50	110/190-500
Viggiu' Ed Uniti	DC	-	-	130
Vighizzolo D'Este	No electricity			
Vigliano Biellese	AC	3	50	150/150-550
Vigliano Biellese	AC	3	50	220
Vigliano D'Asti	AC	3	50	125/220
Vignale	AC	3	42	125/220
Vignate	AC	3	42	145/250
Vignola	AC	3	42	125/220
Vignole Borbera	AC	3	50	150/260
Vignolo	AC	3	50	125/220
Vigo	AC	3	42	115/115-200
Vigodarzere	AC	3	42	125/220
Vigo Di Fassa	AC	3	50	220
Vigolo	AC	3	42	125/220
Vigolo Vattaro	AC	3	50	220
Vigolzone	AC	3	42	130/220
Vigone	AC	3	50	125/220
Vigonovo	AC	3	42	125/220
Vigonza	AC	3	42	125/220
Vigo Rendena	AC	3	42	115/200
Viguzzolo	AC	3	42	125
Villa Bartolomea	AC	3	42	125/220
Villabassa	AC	3	50	125-220-380
Villabella	AC	3	42	220
Villa Biscossi	AC	3	42	125/220
Villa Carcina	AC	3	50	115/200
Villa Carcina	AC	3	42	125/220
Villachiara	AC	3	50	125/220
Villa Corsiono	AC	3	50	125/220
Villa D'Adda	AC	3	42	160
Villadeati	AC	3	50	125/220
Villa Decani	No electricity			
Villa Del Conte	AC	3	42	125/220
Villa Del Nevoso	AC	3	50	120/210
Villa Di Chiavenna	AC	3	42	150
Villa Di Serio	AC	3	50	160
Villa Di Tirano	AC	3	50	125/220
Villa D'Ogna	AC	3	42	150/260
Villa D'Ogna	AC	3	42	150
Villa D'Ogna	DC	-	-	150/300
Villadose	AC	3	42	125/220
Villadossola	AC	3	42	125/220
Villadossola	AC	3	50	150
Villa Estense	AC	3	42	125/220
Villafalletto	AC	3	50	125/220
Villafranca D'Asti	AC	3	50	125/220
Villafranca Di Verona	AC	3	42	125/220
Villafranca Padovana	AC	3	42	125/220
Villafranca Piemonte	AC	3	50	125/220

NAME	TYPE	PHASE	CYCLE	VOLT
Villaga	AC	3	42	125/220
Villa Guardia	AC	3	50	150/260
Villa Legarina	AC	3	50	220
Villa Poma	AC	3	42	125/220
Villa Rondena	AC	3	42	115/200
Villa Santina	AC	3	50	125/220
Villa Slavina	No electricity			
Villa Vergano	AC	3	42	125/220
Villalvernia	AC	3	42	150/260
Villamarzana	No electricity			
Villa Minozzo	AC	3	50	125/220
Villamiroglio	AC	3	50	125
Villandro	DC	-	-	110
Villanova Baltea	AC	3	50	140/250
Villanova Baltea	DC	-	-	115/230
Villanova Biellese	No electricity			
Villanova d'Albenga	AC	3	50	127/220
Villanova D'Ardenghi	AC	3	42	125/220
Villanova Del Ghebbo	AC	3	42	125/220
Villanova Del Sillaro	AC	3	50	125/220
Villanova Di Camposampiero	AC	3	42	220
Villanova Mondovi'	AC	3	50	125/220
Villanova Monferrato	AC	3	42	125/220
Villanova Solaro	AC	3	50	125/220
Villanova Solaro	AC	3	50	160/200-560
Villanova Sull'Arda	AC	3	42	150/250
Villantorio	AC	3	42	125/220
Villanuova D'Asti	AC	3	50	125/220
Villanuova Sul Clisi	AC	3	40	125/220
Villarbasso	AC	3	50	150
Villarbasse	AC	3	50	125/220
Villarboit	AC	3	42	125/220
Villaromagnano	AC	3	50	125
Villar Focchiardo	DC	-	-	220
Villar Focchiardo	AC	3	50	125/220
Villar Pellice	DC	-	-	120
Villar Perosa	AC	3	50	125
Villasanta	AC	3	42	125/220
Villastellone	AC	3	50	125/220
Villata	AC	3	42	125/220
Villavesco	AC	3	42	125/220
Villaverla	AC	3	42	125/220
Villimpenta	AC	3	42	125/220
Villongo	AC	3	42	125/220
Villorba	AC	3	42	125/220
Vilminore Di Scalve	AC	3	42	125/220
Vimercate	AC	3	42	220
Vimodrone	AC	3	42	145/250
Vinadio	AC	3	50	125/220
Vinchio	AC	3	50	125/220
Vinovo	AC	3	50	125/220
Vinzaglio	AC	3	42	125/220
Vione	AC	3	42	125/220

NAME	TYPE	PHASE	CYCLE	VOLT
Vipacco	AC	3	42	125/220-500
Vipiteno	AC	3	50	150
Virgilio	AC	3	42	125/220
Visano	AC	3	42	125/220
Vische	AC	3	50	125/220
Visco	AC	3	50	150
Visignano D'Istria	No electricity			
Visinada	No electricity			
Vistarino	AC	3	42	125
Vistarino	AC	3	42	125/220
Vistrorio	AC	3	50	120
Vito D'Asio	DC	-	-	75-150/150
Vittorio Veneto	AC	3	42	125/125-220
Vittuone	AC	3	50	125/125-500
Viu'	AC	3	50	125/220
Vivaro	AC	3	42	125/220
Viverone	AC	3	50	125/220
Vizze	DC	-	-	220
Vizze	DC	-	-	110
Vizzola Ticino	AC	3	50	125/500
Vizzolo Predabissi	AC	3	42	125/220-530
Vo	AC	3	42	125/220
Vobarno	AC	3	40	125/220
Vobbia	DC	-	-	110
Vobbia	AC	3	50	150/260
Vodo	AC	3	42	115/200
Voghera	AC	3	42	125/220
Vogogna	AC	3	42	125/220
Volano	AC	3	50	220
Volongo	AC	3	42	145/250
Volongo	DC	-	-	250
Volosca-Abbazia	AC	3	50	220/380
Volosca-Abbazia	DC	-	-	750
Volpago Del Montello	DC	-	-	220
Volpara	No electricity			
Volpedo	AC	3	42	125/220
Volpiano	AC	3	50	125/220
Voltago	AC	3	50	115/200
Voltaggio	AC	3	50	220
Volta Mantovana	AC	3	42	135/240
Voltido	AC	3	42	125/220
Volvera	AC	3	50	125/220
Vottignasco	AC	3	50	125/220
Zambana	DC	-	-	110
Zambana	AC	3	42	110-150-220
Zambana	AC	3	50	220
Zane'	AC	3	42	127/220
Zanica	AC	3	50	125/220
Zavattarello Valverde	AC	3	42	125/220
Zelbio Veleso	AC	3	50	125
Zelo Buon Persico	AC	3	42	145/250
Zelo Surrigone	AC	3	42	125/220

NAME	TYPE	PHASE	CYCLE	VOLT
Nemo	AC	3	42	125/220
Nonovrodo	AC	3	42	125/220
Norbo	AC	3	42	125/220
Nerbolo'	AC	3	42	125/220
Nero Branco	AC	3	42	125/220
Nenson Di Piave	AC	3	42	125/220
Nerba	AC	3	42	160
Nevio	AC	3	42	125
Niano	DC	-	-	110/220
Niano	AC	3	42	220
Niano Piacentino	AC	3	42	125/220
Nibido San Giacomo	AC	3	42	160
Nimella	AC	3	42	125/220
Nimone	AC	3	50	125/220
Ninasco	AC	3	42	125/220
Nocca	DC	-	-	65/110
Nogno	AC	3	42	160
Nogno	AC	3	42	125/220
Nola Predosa	AC	3	42	115/200
Noldo Alto	AC	3		125
Nolla	No electricity			
None	AC	3	42	120/210
Noppe'	AC	3	42	125/220
Noppola	AC	3	42	125/220
Novencedo	No electricity			
Nubiena	AC	3	50	125/220
Nuccarello	AC	3	50	150/260
Nugliano	AC	3	42	127/220
Nuglio	AC	3	42	125/220
Numaglia	AC	3	50	125/220

1, 2, 3

APPENDIX V - NORTH ITALY: MAIN HIGH TENSION TRANSMISSION LINES, 1934

Name of Line	Year Opened	Voltage (Kv.)	Frequency (Cycles)	Length (Km.)
Covalou-Turin	1926	132	50	39
Cordano-River Oglio	1929	220	42/50	170
Oglio River-Cislago	1929	220	42/50	72
Levis-Feltre (Vellai)	1931	135/220	42/50	71
Ponte Tresa-Veveri	1929	70/120	50	60.7
Lenie-Casale Monferrato	Under Con.	130	42	90
Colombo-Baggio	1925	130	42	101.8
Colombo-Agognate	1925	130	42/50	77.3
Coretto-Arquata Scrivia	1925	130	42/50	66.1
Fraele-Milano	1928	135	42	182
Breccia-Arquata	1927	140	42/50	126
Brugherio-Reggio Emilia	1923	140	42	152
Reggio Emilia-Bologna	1924	140	42	60
Temu-San Polo d'Enza	1923	125	42	224
Temu-Ligonchio	1928	125	42	263
Foresta-San Polo d'Enza	1925	130	42	255
Mori-Dussolengo	1923	70/130	42	50
Molina-Marghera	1929	125	42/50	81.3
Pelos-Porto Marghera	1931	135	42	52
Fadalto-Dolo	1927	135	42	77
Caneva-Marghera	1930	135	42	61.9
Caneva di Sacile-Opicina	1931	135	42	113.5
Reggio Emilia-Selvanizza-Isola	1931	68/120	42/50	53.5

1. Lines above 120-kv. tension, with a length of 50 km. or more.
2. All lines built since 1930 will be aluminum steel, since the use of copper for conductors was forbidden in that year.
3. Where two figures are given for line tension, the first is provisional and the second final.

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APPENDIX VI - LEADING MANUFACTURERS OF HEAVY ELECTRICAL EQUIPMENT

Name	Location	Capitalization 1936 (million lire)	Date Incorporated	Remarks
Compagnia Generale di Elettricita	Business office & plant: Milano	64	March 1921	Very important firm producing all types of electrical equipment of every size, generators up to 36,000 Kva. transformers up to 36,000 Kva./220,000 v. electric locomotives, mercury arc rectifiers.
Tecnomasio Italiano Brown Boveri	Business office & plant: Milano	69	Dec. 1898	Very important firm producing all types of electrical equipment of every size, mercury arc rectifiers.
S. A. Ansaldo	Business office: Genova-Cornigliano Plants: Genova-Sampierdarena, Genova Sestri Ponente, Pozzuoli	150	Sept. 1922	Very important general engineering firm producing heavy electric generators & transformers, steam & hydraulic turbines, mercury arc rectifiers. Held license for Sulzer Diesel engines.
Ercole Marelli & C.	Business office: Milano. Plant: Sesto San Giovanni	51	Sept. 1920	Very important firm producing all types & sizes of electric equipment, electric railroad equipment, ventilators.

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San Giorgio-S.A. Industriale.	Business office: Genova-Sestri. Plants: Genova-Sestri, Genova-Rivarolo, Spezia, Taranto.	59.5	Nov. 1905	Important general engineering firm producing heavy electric generators & transformers up to 45,000 kva., mercury arc rectifiers, precision equipment for military use, optical apparatus, hydraulic turbines. Specialists in large-size pumps electrically driven.
Italiana Ernesto Breda per Costruzioni Meccaniche	Business office: Milano Plants: Milano, Sesto San Giovanni Venezia, Brescia, Roma	84	Dec. 1899	Specialists in electric locomotives. Heavy electric generators and transformers.
Nazionale Officine di Savigliano	Business office: Savigliano Plants: Savigliano and Torino	30	Mar. 1881	General engineering firm with special reference to heavy electric generators & transformers, equipment for railways, streetcars, bridges, radio.
Cantieri Riuniti dell' Adriatico	Business office: Trieste Plants: Monfalcone, San Marco, San Rocco	100	Apr. 1908	Heavy electric generators & transformers, especially electric motors.
Franco Tosi	Business office: Milano Plant: Legnano	51.1	Jul. 1918	Hydraulic equipment, turbines, regulators.
Costruzioni Meccaniche Riva	Business office: Milano Plant: Milano	12	Jan. 1914	Same

Alessandro Calzoni (Costruzioni Meccaniche e Fonderie)	Business office & plant: Bologna	10	Oct. 1920	Same
Officine Elettromeccaniche Scarpo & Magnano	Business office & plant: Savona	3.2	Aug. 1926	Medium-Sized transformers, electric equipment for substations, circuit breakers.
Pellizzari	Arzignano (Vicenza)			Same
Elettromeccanica Lombarda Ingg. Grugnola e Solari	Business office & plant: Sesto San Giovanni	3	Dec. 1920	Same
"Adda" (Officine Elettrotecniche e Meccaniche)	Business office & plant: Lodi	5*	Aug. 1926	Same
Officine Trasformatori	Bergamo			Same
Vanossi	Business office & plant: Milano	1.75	Apr. 1919	Same
Etna	Genova			Same
Officine Tellero	Milano			Same
Magrini--S.A.	Business office & plant: Bergamo			Same. Plus precision instruments.

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Istrumenti di Misura C.G.S.	Business office: Milano. Plant: Monza	7.5*	Feb. 1923	Measuring equipment
rcioni	Milano			Lano.

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APPENDIX VII. PROVINCIAL OFFICES OF THE GENIO CIVILE

1. Alessandria: Via Legnano 1.
2. Aosta: Pal. dell'Economia Corporativa. P. Vittorio Veneto.
3. Arezzo: V.S. Lorentino 2.
4. Asti: Piazza Medici 4.

5. Belluno: Via Ippolito Caffi 11 A.
6. Bergamo: Via. S. Francesco d'Assisi 1.
7. Bologna: Via 3 Nov. 22, Palazzo del Governo.
8. Bolzano: Via Dante 3.
9. Brescia: Piazza della Vittoria 6.

10. Como: Via Oriani 2.
11. Cremona: Corso Campi 10.
12. Cuneo: Viale Angeli 11.

13. Este: Via Principe Amadeo 15.

14. Ferrara: Vicolo degli Spadari 9.
15. Fiume: Viale delle Camicie Nere 1.
16. Forli: Piazza Dante Alighiere 4.

17. Genova: Via Sauli 3, int. 2 da Via S. Vincenzo.
18. Gorizia: Via Dante 4.

19. Imperia: Corso Dante Alighiere, Pal. Governo.

20. La Spezia: Via Persio n. 5.

21. Mantova: Corso Vittorio Emanuele n. 57.
22. Milano: Via Sala 3.
23. Modena: Piazza Mazzini 7.

24. Novara: Via Baluardo Mazzini 2.

25. Padova: Via Rolando da Piazzola 3.
26. Parma: Via Giuseppi Garibaldi 15.
27. Pavia: Corso Mazzini 18.
28. Piacenza: Via Roma 76.
29. Pola: Via Garibaldi 13.

30. Ravenna: Via IX Febbraio 2.
31. Reggio Emilia: Via Emilia S. Stefano 27.
32. Rovigo: Via Umberto 1.

33. Savona: Piazza Goffredo Mameli n. 4.
34. Sondrio: Via Bonfadini.

35. Torino: Corso Inghilterra 41.
36. Trento: Piazza Alessandro Vittorio 5.
37. Treviso: Viale Trento e Trieste 16.
38. Trieste: Via Cassa di Risparmio 12.

39. Udine: Via della Prefettura 10.

40. Varese: Via Vetera 7.
41. Venezia: Sottoportico di Rialto 50.
42. Vercelli: Via Torino 1.
43. Vicenza: Via Porti 21.

44. Zara: Colle S. Domenico 14.